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ABSTRACT

The purpose of the analysis was to provide a profile of instructional activities related to content and referenced to specified instructional outcome areas. Emphasis was placed on determination of four major factors: (1) major outcomes in the program and their relative emphasis in both regular and supplementary instructional materials, (2) the distribution of content within and across instructional units (chapters), (3) points in the instructional sequence where mastery of outcomes is assessed, and (4) the amount of independent practice in regular and supplementary instructional materials related directly to each major outcome developed in the program. The analysis was organized around 21 content strands, and is presented in a series of tables which indicate page locations of various topics. The completed analysis forms the basis for preliminary specification of an application of Learning Mastery System procedures to the system. (Author/SD)

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SOUTHWEST REGIONAL LABORATORY
TECHNICAL NOTE

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TITLE: CONTENT ANALYSIS OF ADDISON-WESLEY MATHEMATICS PROGRAM FOR
ELEMENTARY GRADES K-6

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ABSTRACT

A content analysis was completed of the Addison-Wesley mathematics series for elementary grades. The purpose of the analysis was to provide a profile of instructional activities related to content and referenced to specified instructional outcome areas. Emphasis was placed on determination of:

1. major outcomes in the program and their relative emphasis in both regular and supplementary instructional materials.
2. the distribution of content within and across instructional units (chapters).
3. points in the instructional sequence where mastery of outcomes is assessed.
4. the amount of independent practice in regular and supplementary instructional materials related directly to each major outcome developed in the program.

The completed analysis forms the basis for preliminary specification of an application of Learning Mastery System procedures to the series.

CONTENT ANALYSIS OF ADDISON-WESLEY MATHEMATICS PROGRAM FOR ELEMENTARY GRADES K-6

Aaron Buchanan, Elijah Babikian, Jim Winchester and Sylvia Auton

This document describes a content analysis of the Addison-Wesley mathematics series for elementary grades. The document is divided into three sections as follows:

Description of the Analysis. Procedures used by staff members of the Southwest Regional Laboratory for Educational Research and Development (SWRL) in performing the analysis are described. These procedures were used to generate descriptors of instructional outcomes from index entries in the Addison-Wesley teacher's editions and to determine the location of instructional and evaluation activities relevant to these outcomes in various Addison-Wesley components.

Interpretation of the Analysis. Procedures are recommended for identifying relationships in the analysis table between content organization, evaluation of outcomes, and provisions for individual practice, and for comparing these relationships with those desired in application of a Learning Mastery System.

Preliminary Specifications of a Learning Mastery System Application. Broad preliminary specifications for the architecture of an application of a Learning Mastery System to the Addison-Wesley series are presented. These specifications include: (1) a discrete number of broad instructional outcomes that can serve as a unifying structure for assessing pupil progress through various levels of the program, (2) suggested evaluation components, and (3) materials suitable for individual prac-

tice on outcomes assessed in LMS throughout the program.

DESCRIPTION OF THE ANALYSIS

CONTENT STRANDS

The analysis is organized around twenty-one vertical strands of content identified by Addison-Wesley as basic units of a program structure. These strands are listed below in the order of their appearance in the program scope and sequence chart in each teacher's edition.

- Set Concepts
- Place Value
- Operations
- Sequences
- Inequalities
- Notation
- Number Facts
- Equations and Solutions
- Number Line
- Basic Principles
- Processes (Algorithms)
- Rational Numbers
- Ratio and Proportion
- Problem Solving
- Logic
- Number Theory
- Estimation
- Measurement
- Geometry
- Graphs and Scale Drawings
- Special Topics

OUTCOME DESCRIPTORS

For each strand and substrand, a set of outcome descriptors has been prepared by SWRL staff to describe the content at each level of the program. These descriptors are statements of expected outcomes of

instruction. An example of descriptors for the "Place Value" strand in Grade 5 is shown below.

1. Read and write numerals

Thousands
Millions
Billions to Quintillions

2. Identify place values of digits in numerals

Whole numbers
Decimal numbers

3. Recognize numerals in different bases

Base-10 numerals
Base-4 numerals

4. Represent numerals in expanded form

5. Write numerals using different notations

Exponential notation
Decimal notation

6. Represent numbers by concrete models

Abacus
Base ten machine

Outcome descriptors were derived using the following procedures:

1. All entries in the index of the teacher's edition were partitioned according to content strands listed in the scope and sequence chart. Since scope and sequence entries overlapped among some strands, elementary priorities in classification were followed which eliminated most of the multiple listing of index entries.

2. Within each strand, index entries were translated into a small set of statements of intended mathematical behaviors (outcome descriptors). In some instances, the descriptors are comprehensive, and no

subordinate outcomes are included; in other instances, subordinate outcomes are included because major portions of the instructional materials were devoted to their review.

TABLE ENTRIES

Instructional activities (designated lessons) from the core components of the Addison-Wesley program were classified according to the prespecified outcome descriptors. The core components used were the student text (teacher's edition), the student workbook, and a separate battery of chapter tests. Since the purpose of the analysis was to obtain a profile of instructional activities, an exhaustive listing of all activities included in all components was not necessary. Diagnostic tests were not included because they were chapter pretests which paralleled the structure and function of chapter tests. A description of major supplementary program components is in Appendix A.

Entries in the table refer to page numbers in the student text and workbook, and the chapter tests where instructional activities pertinent to the outcome descriptor are located. For each entry, the number of items or problems directly related to the outcome descriptor was determined. It was reasoned that item frequencies directly related to an outcome descriptor are better indicators of the amount of independent practice provided in a chapter for each outcome than are page entries. In determining item frequencies the number ten was chosen as a cutoff point since most instructional activities related principally to major outcomes contained at least ten items of practice. An entry of (10) following a set of page entries or a chapter test indi-

cates that ten or more items providing direct practice on the outcome were found.

During the course of the analysis, it became necessary to develop conventions for determining item frequencies. Items were counted according to the number of separate responses requiring direct outcome-related performances. In some instances, such as the reproduction of counting sequences, individual responses were not independent of each other. In this case, each separate sequence was counted as a response. In many instances, mastery of a particular outcome, such as recognition of commutativity of addition, would be helpful in making a response, but unnecessary. Where responses could be made as a result of acquisition of some other outcome, especially an outcome that is learned rather early in the instructional sequence (such as recognition of number facts), no items were recorded with the descriptor. Conventions were also developed for classifying problems in activities involving either number line or semi-concrete pictorial models to solve equations. While use of the model might be helpful in making a required response, it was seldom required that the model be interpreted; a recall of basic number facts or the application of some computation algorithm was usually sufficient. In instances such as these, an item was recorded for purposes of the analysis with a descriptor involving "models" if there were separate representations of the model for each equation.

Actual entries for a particular descriptor are coded as follows:

1. Pages from the student text (or student pages from the teacher's edition) appear in regular typeface with the number of items, to 10, following in parentheses.

2. Pages from the student workbook and the number of related items, to 10, are underlined.

3. Chapter test entries are preceded by CT with the number of items related to the descriptor following.

INTERPRETATION OF THE ANALYSIS

CONTENT STRANDS

The distribution of content in the program can be inferred from the analysis in the following ways:

1. Examination of Instruction and Evaluation Entries for a Particular Outcome Across Chapters and Levels. It is possible to draw some conclusions concerning the independence of one outcome from another. If there are several instructional entries, but few review or evaluation entries, it is possible to infer that this outcome cannot be easily separated from other outcomes during instruction. This inference is related to methods used in development of the analysis. The major source of instruction entries (textbook) was the index of teacher's editions at each level. Since index entries are likely to be classified with as many content domains as are possibly relevant, there was some multiple classification among instructional entries. Review and evaluation entries, on the other hand, were made from a page-by-page analysis of the components. In this case, multiple classification was avoided wherever possible, and activities were referenced to the outcome with the most appropriate descriptor. Most of the multiple classification, which is not extensive in Addison-Wesley, occurs in "Operations",

"Number Facts", "Processes" and "Rational Numbers". For example, operations on rational numbers were often classified under both "Rational Numbers" and "Processes".

2. Examination of Entries in the Chapter Columns. For purposes of a Learning Mastery System it is desirable that content included in each chapter be reasonably homogeneous. Unit division should be determined primarily by outcomes to be acquired and their presentation sequence. The instructional entries in each chapter should be spread over no more than 7 or 8 outcomes if evaluation of mastery is to retain some reliability and tests are to remain a reasonable length. Where chapters in Addison-Wesley provide instruction on more outcomes than this, it may be necessary to defer assessment of some outcomes until they are represented in a subsequent chapter.

3. Examination of all Descriptors for a Particular Content Strand over all Levels of the Program. If there are very few descriptors that differ distinctly, or if the set of descriptors show little hierarchical relationship, the strand probably does not possess strong sequential characteristics of its own. Frequently, as in "Problem Solving", the strand exists primarily for the inclusion of activities where mathematical skills are applied to verbal or pictorial problems. Some strands, such as "Set Concepts" in Levels K-3, exist principally as a model for whole numbers and related operations. By comparison, material devoted directly to the development of concepts related to sets and set theory is relatively minor.

OUTCOME ASSESSMENT

Instructional entries frequently occur in the analysis with no accompanying evaluation entries. In general, this circumstance implies one of the following:

1. Evaluation is deficient
2. Instruction is primarily in the form of teacher explanation with little or no independent practice for the pupil.
3. Instruction and practice on a particular outcome cannot be separated from a more inclusive outcome.
4. The outcome is minor in comparison to the amount of instruction given on other skills presented in the unit.

The number of items per skill-per unit averages 3-4 for major skills and 1-3 for minor skills. Item frequencies such as these may be adequate in skill maintenance or retention, but should probably be increased in criterion exercises where acquisition of new or extended skills is assessed.

INDEPENDENT PRACTICE

The amount of independent practice on each outcome can be determined by attending to the numbers in parentheses following underlined and non-underlined page entries. Of primary interest are instances where instructional entries (regular instruction and review) are associated with fewer than ten items of independent practice. The number ten was chosen as a reference point for the analysis since many activities approached but did not exceed this number. It was reasoned that outcomes with fewer than ten items of practice, and

particularly outcomes with fewer than five or six items, do not provide sufficient practice for attainment of the skill.

PRELIMINARY SPECIFICATIONS OF A LEARNING MASTERY SYSTEM APPLICATION

CONTENT STRANDS

The strands of content related to the arithmetic of whole and rational numbers are dominant. This may be inferred by inspecting the number of outcomes developed (as represented by outcome descriptors) and the number of instructional entries per outcome. Outcomes developed in these strands, as well as most of their substrands, usually include at least 10 items of independent practice. Strands such as "Operations" and, at earlier levels, "Number Theory", could contain so many outcome descriptors in common with other strands that it is doubtful their preservation as independent outcome areas in a Learning Mastery System would be worthwhile. In general, the number of content domains (twenty-one) will be reduced by combining domains in an application of the Learning Mastery System.

INSTRUCTIONAL OUTCOMES

Five or six broad outcomes such as the following likely will be recommended as a basic outcome structure for the development of Learning Mastery System procedures:

1. Recognize basic elements and concepts
2. Decode systems of symbols
3. Express mathematical relationships
4. Verify mathematical relationships

5. Perform operations
6. Solve verbal problems

One or more of these outcomes represent major skills to be developed in each of content domains such as the following:

- I. Sets
- II. Whole numbers
- III. Rational numbers (positive)
- IV. Integers
- V. Geometry
- VI. Measurement
- VII. Logic

Pupil progress through broad instructional sequences for outcomes applicable to each content domain will be monitored throughout the program. At each level, a set of outcome descriptors will further refine cells in the outcome-content matrix to reflect all of the content included in the program for that level.

EVALUATION COMPONENTS

In a number of instances recognition of properties of mathematical operations is introduced through verbal instructions given by the teacher. Pupils are encouraged but not required to recognize these properties in solving related equations or problems. Acquisition of skills such as these should not be assessed in a Learning Mastery System until approximately 10 items of independent practice have been provided in a single chapter.

Occasionally chapters contain instructional entries classified under outcome descriptors which are peripheral to major skills under development. The major focus in chapters such as these will be assessment of outcomes introduced and any of their prerequisites which are reviewed. In chapters where no instruction on new outcomes is begun, the principal outcomes under review will be evaluated. The context for evaluation should include settings which parallel those used during regular instruction, but they should also include some transfer settings which may be generally familiar to the pupil but not in association with the outcome under development. In general, there should not be more than two or three items of the latter type for any particular outcome developed in a chapter.

LMS evaluation components for Addison-Wesley should include the following:

1. Four to Six Pretests for Each Level. The number of pretests will be determined by the number of major breaks in the continuity of the instructional sequence. It will not be necessary to specify a pretest for each chapter, since many follow directly from the previous chapter. Essentially, all of the information which might be of value to the teacher can be obtained from posttest or criterion exercise instruments for the previous unit. Pretests should provide a comprehensive sample of behaviors that are prerequisite to the major skills developed in the chapter. The information obtained from the pretest should guide the teacher in determining the relative emphasis to be given any prerequisite behaviors which are reviewed

prior to the introduction of new material. Efforts will be made to use existing Addison-Wesley Diagnostic Tests, although sections of these pretests are not clearly structured according to outcomes.

2. En-route Assessment Devices for Each Major Outcome Introduced or Reviewed. A limited number of problems in the regular daily assignment will be identified which the teacher can review as a check on the progress of the pupil toward mastery of the outcome.

3. End-of-Unit Criterion Exercise for Each Unit. Each exercise should include at least one section for each of the major outcomes on which instruction was provided in that unit. Approximately 4-5 items should be included for each individual outcome representing material which has been introduced or extended. One or two items should be included for each descriptor where previously mastered skills have been reviewed or maintained.

Each exercise should include a limited number of problems where computational skills which have been developed are applied to the solution of verbal problems. The format for all items on the criterion exercise should be multiple choice with at least some of the distractors representing typical errors which might be made on this type of problem.

SWRL-developed instruments are recommended over existing Addison-Wesley Chapter Tests for the following reasons:

(1) Addison-Wesley Chapter Tests are not clearly organized around instructional outcomes.

(2) Many outcome areas are evaluated with fewer than 4 items per instrument.

(3) The constructed response format used with items is incompatible with machine scoring and remedial practice based on typical errors.

(4) In Levels 3 and 4, no components for formal evaluation of Geometry units are presently available.

PRACTICE COMPONENTS

Appropriate practice materials should be developed as part of the LMS. Wherever possible, supplementary practice should be provided in such a way that the teacher can select exercises on the basis of major types of errors committed.

SUPPORT COMPONENTS

Various support components, including a technical manual and appropriate record keeping materials will also be provided.

APPENDIX A

DESCRIPTION OF ADDISON-WESLEY COMPONENTS

(1) Diagnostic tests-A battery of 12 diagnostic tests, with 15-20 items per test, is provided for use prior to instruction in each chapter. The tests are designed to identify students in need of special help on material to be presented in the chapter. Items on all of the tests are parallel to problems provided for practice during regular instruction. They sample from all material, both introduced and reviewed. Test items and sections are not referenced to particular pages in the student text or teacher's edition. No references are given in the teacher's edition for use of the tests.

(2) Duplicating Masters-A set of duplicating masters is provided for each of Levels 1-6. Approximately 90 masters are available for Levels 1 and 2, and 60 masters for each of Levels 3-6. These masters contain problems which are parallel to problems included in the student's text. Points where duplicating masters are to be given are designated on each master. No references are given in the teacher's edition for use of the masters during regular instruction.

(3) Workbook-A workbook for each of Levels 3-6 provides approximately 95 pages of practice problems parallel to material in the student's text. Each practice page is associated with a specific page in the student's text as designated in a correlation chart

located in the workbook. No reference to use of workbooks is given in the teacher's edition.

(4) "Getty Ready" Books-Readiness books are provided for each of Levels 3-6. Each book includes 48 pages with activities which review material presented in the previous grade level.

(5) Chapter and Term Tests-A battery of tests is provided for use after instruction in each chapter. One test of approximately 20 items is available for each chapter. Two additional tests are to be used at midyear and after completion of the textbook. Items on all of the tests are parallel to problems provided for practice during regular instruction. Test items and sections are not referenced to particular pages in the student's text. No references are given in the teacher's edition to use of this battery.

APPENDIX B

CONTENT ANALYSIS

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
PRIMER

APPENDIX B

UNIT				
PAGES				
1	2	3	4	5
1-14	15-20	21-34	35-46	47-80
I. SET CONCEPTS				
1. Compare set membership by identifying common property (function) of elements	15-16 (8) ^a			
2. Recognize equivalent sets by placing elements in 1-1 correspondence		25-30 (10)		
3. Identify numeral for number of elements in a set (introduction) Sets to 0 (Empty set)			43-6 (6) 35, 39-46 (10) 36, 39-46 (10) 37, 39-46 (10) 38-46 (10)	47-50 (10) 51-4, 56 (10) 57-60 (10) 61-4, 66 (10) 67-70 (10) 71-4, 76-8 (10)
4. Identify number of elements in union of a set with one element and a set with 4-9 elements (combinations with one)				47, 49, 51, 57, 61, 67, 71 (10)
5. Identify number of elements in each of two given subsets and the number in their union set (Intuitive addition and subtraction-Combinations with numbers other than one)				47, 49, 50 (8) 51, 53-4 (9) 57, 59-60 (9) 61, 63-4 (8) 67, 69-70 (9) 71, 73-4 (10) 78, 80
II. PLACE VALUE (No Outcomes)				
III. OPERATIONS (No Outcomes)				

^aNumerals refer to student pages in teacher's edition. Numeral in parentheses indicates the number of problems (to 10) in the chapter in which principal practice is on the outcome described.

IV. SEQUENCES

1. Order numerals in counting sequence
 - To 6
 - To 8
 - To 10

V. INEQUALITIES

1. Compare objects by size (larger, smaller, largest, smallest, longer, shorter, taller, tallest)
2. Compare sets (more, less)
3. Identify and/or construct set with one more element than given set

VI. NOTATION

1. Recognize numerals 1-10

(See I-2)

VII. NUMBER FACTS

1. Identify number of elements in missing subset, given one subset and the number of elements in the union set (Intuitive introduction to subtraction-Missing addend)

VIII. EQUATIONS AND SOLUTIONS
(No Outcomes)

IX. NUMBER LINE (No Outcomes)

X. BASIC PRINCIPLES

1. Recognition of commutative principle (intuitive)

XI. PROCESSES (ALGORITHMS)
(No Outcomes)55(3)
65(3)
75(3)

21-4, 31-2(10)

33-4(6)

79(10)

79(10)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

PRIMER

UNIT		1	2	3	4	5
PAGES		1-14	15-20	21-34	35-46	47-80
XII. RATIONAL NUMBERS (No Outcomes)						
XIII. RATIO AND PROPORTION (No Outcomes)						
XIV. PROBLEM SOLVING						
1. Interpret "rebus" problems						
XV. LOGIC						
1. Complete geometric patterns		(See XXI)				47, 49, 51, 61, 71(10)
XVI. NUMBER THEORY (No Outcomes)						
XVII. ESTIMATION (No Outcomes)						
XVIII. MEASUREMENT (No Outcomes)						
XIX. GEOMETRY						
1. Compare objects by similarities and differences in shape		11-12(8) 8, 10(8)				
Differences						
Similarities						
2. Identify objects by relative position.						
(inside, outside, above, below, beside, on)		8, 9(10)				
XX. GRAPHS AND SCALE DRAWINGS (No Outcomes)						
XXI. SPECIAL TOPICS						
1. Complete geometric patterns						
Geometric figures						
Sequential patterns		13-14(6)	17-20(10)			

UNIT PAGES	1 1-10	2 11-38	3 39-56	4 57-72	5 73-96	6 97-152	7 153-198
I. SET CONCEPTS							
1. Recognize cardinal number property of sets							
Sets of 1		11, 15-32 (10) 12, 15-32 (10) / CT(1)	45-48 (2) 45-48 (4)				
2		13, 15-32 (10) / CT(1)	45-48 (4)				
3		14-32 (10) / CT(1)	45-48 (3) / CT(1)				
4		19-32 (10) / CT(1)	45-48 (4) / CT(1)				
5		21-32 (10) / CT(1)	45-48 (4) / CT(1)				
6		23-32 (10) / CT(1)	45-48 (3)				
7		27-32 (10) / CT(2)	45-48 (4) / CT(1)				
8		29-32 (6) / CT(1)	45-48 (3)				
9							
10							154-156 (10) / CT(3)
2. Recognize special sets							
Empty set		35-36 (3) / CT(1)					
Equivalent sets / Subsets	6 (2)				75-80 (10) / CT(2)		
3. Compare sets							
Using one to one matching	3-6 (5) / CT (1)						
By indicating more than, less than	1, 2, 7, 8 (10) / CT(2)						
By indicating one more, than	9, 10 (7) / CT(1)						

^b Numerals preceded by CT refer to the number of items on the chapter test (independent battery of chapter tests) which involve primarily the outcome described.

MS MATH
ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 1

UNIT PAGES	1 1-10	2 11-38	3 39-56	4 57-72	5 73-96	6 97-152	7 153-198
4. Relate operations on whole numbers to sets Addition (joining of sets) Subtraction (separation of sets)				57-66 (10) / CT(1)	73-80 (10) / CT(2)		
II. PLACE VALUE 1. Relate the word "ten" to a set of 10 2. Recognize the number of elements of sets grouped by Tens Tens and ones							152 (2) 154-156, 163- 164, 167 (10) / CT(3) 157-160, 168- 170 (10) / CT(3)
3. Associate numerals for whole numbers with place values by rewriting numerals for numbers less than one hundred Write place values for given numerals Write numerals for given place values							162, 166 (10) 159-161, 163- 165 (10)
III. OPERATIONS 1. Add and subtract whole numbers Sums to 10 Sums greater than 10 Sums of 3 or more digits Differences and missing addends 2. Recognize inverse relationship between addition and subtraction				61-68 (10) / CT(7) 69-72 (10) / CT(2)		97-152 (10) / CT(5) 97-152 (10) / CT(5)	
					87-92 (10) / CT(4)	106, 118, 134, 148 (10) / CT(2)	

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 1

-22-

UNIT		1	2	3	4	5	6	7
PAGES		1-10	11-38	39-56	57-72	73-96	97-152	153-198
IV.	SEQUENCES							
1.	Place numerals in counting sequence			50 (6) / CT (1)				175, 183 (9)
	To 99							171 (8) / CT (2)
	Within decades							173-174 (10)
	One decade to the next							177-178,
	Connect numbered dots			44 (9) / CT (1)	CT (1)	CT (1)	CT (1)	181-184 (5) / CT (1)
2.	Indicate numbers (before, after, before and after, between)							172, 176 (10)
V.	INEQUALITIES							
1.	Compare two whole numbers							
	Identifying number "less than" or "greater than" a specified number			53-54 (10) / CT (1)				192 (10)
	Using symbols $<$, $>$, $=$			56 (10) / CT (2)			108, 122, 129, 150 (10)	186-190 (10) / CT (2), 191 (10)
	Completing an inequality statement with a number			51-52; 55 (9) / CT (1)				
	Comparing unequal sets							193-194 (10)
2.	Compare money values by indicating more or less							
VI.	NOTATION							
1.	Recognize digits 1-9*		11-15, 19-32, (10) / CT (8)					
2.	Write numerals 1-9			39-44 (10) / CT (10)				

* Outcomes designated with (*) are reinforced throughout the text.

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 1

UNIT PAGES	1 1-10	2 11-38	3 39-56	4 57-72	5 73-96	6 97-152	7 153-198
3. Write two digit numerals from an expanded place value notation	(See II-3)						
4. Write two digit numerals as expanded notation sums							
5. Recognize and interpret symbols $<$, $>$, + - ÷ ()	(See also V-1)		55(4)/CT(2)	59-60(6)	73-74(6)	123-124(7)/ CT(1)	
6. Use vertical algorithm in simple computations Addition Subtraction				64(10)/CT(1)	78(10)/CT(1)		
VII. NUMBER FACTS 1. Recall addition and subtraction facts by providing answers for simple problems Sums through 9 Sums of 10 Sums through 18				61-72(10)/ CT(9)	73-86(10)/ CT(9)	97-152(10)/ CT(10)	
VIII. EQUATIONS AND SOLUTIONS 1. Interpret equations using <input type="checkbox"/> notation (Introduction) Addition Subtraction				61-63(10)/ CT(9)	75-77(10)/ CT(6)		
IX. NUMBER LINE 1. Illustrate order of whole numbers on the number line			49(3)/CT(1)				

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 1

-24-

UNIT PAGES	1 1-10	2 11-38	3 39-56	4 57-72	5 73-96	6 97-152	7 153-198
2. Recognize operations represented on the number line Addition Subtraction				67 (4) / CT(1)	81 (4) / CT(1)		
X. BASIC PRINCIPLES 1. Recognize and use basic principles for addition and subtraction operations Commutative principle Associative principle Zero principle Use of parentheses (grouping)				66 (10)	93-94 (10) / CT(1)		
XI. PROCESSES (ALGORITHMS) In Grade 1 no outcomes for this topic are described in the Scope and Sequence							
XII. RATIONAL NUMBERS 1. Recognize fractions as descriptors of relationships between equivalent subsets and subregions $\frac{1}{2}$ $\frac{1}{3}$							
XIII. RATIO AND PROPORTION In Grade 1 no outcomes for this topic are described in the Scope and Sequence							
XIV. PROBLEM SOLVING 1. Solve simple word-picture problems involving Number, of pennies in a set Total value of a group of pennies, nickles and dimes		33-34 (7) / CT(1)					179-180 (6) / CT(1)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 1

UNIT PAGES	1 1-10	2 11-38	3 39-56	4 57-72	5 73-96	6 97-152	7 153-198
Addition using nickles and pennies Subtraction using nickles and pennies Adding costs of objects Making change						123 (2)/CT (1) 124 (3)	
XV. LOGIC 1. Use informal logic in reasoning with Addition and subtraction- inverse relationship Sums greater than 10 Subtraction					87-92 (10)/ CT (3)	118 (6)/CT (2)	
XVI. NUMBER THEORY 1. Recognize and complete number sequences Odd number sequence Even number sequence Counting by 3's Counting by 4's Counting by 5's Counting by 10's							
XVII. ESTIMATION In Grade 1 no outcomes for this topic are described in the Scope and Sequence							
XVIII. MEASUREMENT 1. Recognize and use systems for linear measure Unit of length comparisons Inch Centimeter							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 1

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UNIT PAGES

1	2	3	4	5	6	7
1-10	11-38	39-56	57-72	73-96	97-152	153-198
2. Recognize and use systems for capacity measure Cup Pint Quart						
XIX. GEOMETRY 1. Recognize and discriminate various geometric figures Triangle Square Circle Rectangle						
XX. GRAPHS AND SCALE DRAWINGS In Grade 1 no outcomes for this topic are described in the Scope and Sequence						
XXI. SPECIAL TOPICS 1. Tell time by indicating the correct time on a clock-face model To the hour To the half-hour						195-198 (19) 198 (3)
CUMULATIVE REVIEWS ("Looking Back")						

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 1

UNIT		8	9	10	11	12	13
PAGES		199-222	223-234	235-258	259-268	269-288	289-296
I.	SET CONCEPTS						
1.	Recognize cardinal number property of sets						
	Sets of 1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
2.	Recognize special sets						
	Empty set						
	Equivalent sets						
	Subsets						
3.	Compare sets						
	Using one to one matching						
	By indicating more than, less than						
	By indicating one more than						
4.	Relate operations on whole numbers to sets						
	Addition (joining of sets)				259(0)/CT(1)		
	Subtraction (separation of sets)				259(0)/CT(1)		
II.	PLACE VALUE						
1.	Relate the word "ten" to a set of 10						
2.	Recognize the number of elements of sets grouped by Tens						
	Tens and ones				267(3)		

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 1

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UNIT		PAGES					UNIT		
		8	9	10	11	12	13		
		199-222	223-234	235-258	259-268	269-288	289-296		
3.	Associate numerals for whole numbers with place values by rewriting numerals for numbers less than one hundred			240 (10) 239 (10)					
	Write place values for given numerals								
	Write numerals for given place values								
III.	OPERATIONS								
1.	Add and subtract whole numbers								
	Sums to 10	199-222 (10) / CT (6)							
	Sums greater than 10			243-258 (10) / CT (6) 256 (6)	CT (1)				
	Sums of 3 or more digits								
	Differences and missing addends	199-222 (10) / CT (5)			259-266 (10) / CT (8)				
2.	Recognize inverse relationship between addition and subtraction								
IV.	SEQUENCES								
1.	Place numerals in counting sequence								
	To 99								
	Within decades								
	One decade to the next								
	Connect numbered dots								
	Indicate numbers (before, after, before and after, between)	CT (1)	CT (1)	CT (1)	267 (3) CT (1)	CT (1)			
2.									
V.	INEQUALITIES								
1.	Compare two whole numbers by								
	Identifying number "less than" or "greater than" a specified number								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 1

UNIT
PAGES

Using symbols $<$, $>$, $=$

- Completing an inequality statement with a number
Comparing unequal sets
2. Compare money values by indicating more or less

VI. NOTATION

1. Recognize digits 1-9
2. Write numerals 1-9
3. Write two digit numerals from an expanded place value notation
4. Write two digit numerals as expanded notation sums

5. Recognize and interpret symbols $<$, $>$

+
-
÷
()

6. Use vertical algorithm in simple computations
Addition
Subtraction

VII. NUMBER FACTS

1. Recall addition and subtraction facts by providing answers for simple problems
Sums through 9

8	9	10	11	12	13
199-222	223-234	235-258	259-268	269-288	289-296
205, 216, 217 221-222 (10)			267 (6)		
		241-242 (10) / CT (2)			
			268 (4) 268 (4)		
	227-234 (10) / CT (2)				
199-222 (10)					

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 1

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UNIT PAGES	8 199-222 199-201, 203- 205, 208-210 (10)/CT(9)	9 223-234	10 235-258 235-238(10)	11 259-268 259-266(10)/ CT(9)	12 269-288	13 289-296
Sums of 10						
Sums through 18						
VIII. EQUATIONS AND SOLUTIONS Interpret equations using <input type="checkbox"/> notation (Introduction) Addition Subtraction						
IX. NUMBER LINE 1. Illustrate order of whole numbers on the number line						
2. Recognize operations repre- sented on the number line Addition	201(2)/CT(1)		251-252(8)/ CT(1)			
Subtraction	211(2)					
BASIC PRINCIPLES Recognize and use basic principles for addition and sub- traction operations Commutative principle Associative principle Zero principle Use of parentheses (grouping)		223-226(10)/ CT(3) 231-234(10)/ CT(5) 227-230(10)/ CT(2)				
XI. PROCESSES (ALGORITHMS) In Grade 1 no outcomes for this topic are described in the Scope and Sequence						

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 1

UNIT PAGES		8 199-222	9 223-234	10 235-258	11 259-268	12 269-288	13 289-296
XII. RATIONAL NUMBERS							
1. Recognize fractions as descriptors of relationships between equivalent subsets and subregions	$\frac{1}{2}$					277-278 (8) / CT (1)	
	$\frac{1}{3}$					279-280 (8) / CT (1)	
XIII. RATIO AND PROPORTION							
In Grade 1 no outcomes for this topic are described in the Scope and Sequence							
XIV. PROBLEM SOLVING							
1. Solve simple word-picture problems involving	Number of pennies in a set						
	Total value of a group of pennies, nickles and dimes						
	Addition using nickles and pennies			257 (4)			
	Subtraction using nickles and pennies						
	Adding costs of objects			258 (4) / CT (1)			
Making change					265-266 (7) / CT (1)		
XV. LOGIC							
1. Use informal logic in reasoning with	Addition and subtraction-inverse relationship						

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 1

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UNIT	8	9	10	11	12	13
PAGES	199-222	223-234	235-258	259-268	269-288	289-296
Sums greater than 10			253-254 (10) / CT (1)	261-262 (10) / CT (5)		
Subtraction						
XVI. NUMBER THEORY						
1. Recognize and complete number sequences						
Odd number sequence						
Even number sequence					269-270 (5) / CT (1)	
Counting by 3's					269-270,	
Counting by 4's					272 (6) / CT (1)	
Counting by 5's					271-272 (2)	
Counting by 10's					272 (1)	
					271-273 (6) / CT (1)	
					274 (4)	
XVII. ESTIMATION						
In Grade 1 no outcomes for this topic are described in the Scope and Sequence						
XVIII. MEASUREMENT						
1. Recognize and use systems for linear measure						
Unit of length comparisons						
Inch					281-282 (10)	
Centimeter					283-284 (8) / CT (1)	
					283-284 (8) / CT (1)	
2. Recognize and use systems for capacity measure						
Cup					285-286 (10) / CT (1)	

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 1

UNIT PAGES	8 199-222	9 223-234	10 235-258	11 259-268	12 269-288	13 289-296
Pint					285-286 (10) 285-286 (10) / CT (1)	
Quart						
XIX. GEOMETRY						
1. Recognize and discriminate various geometric figures						
Triangle						
Square						
Circle						
Rectangle						
XX. GRAPHS AND SCALE DRAWINGS						
In Grade 1 no outcomes for this topic are described in the Scope and Sequence						
XXI. SPECIAL TOPICS						
1. Tell time by indicating the correct time on a clock-face model						
To the hour						
To the half-hour						
CUMULATIVE REVIEWS ("Looking Back")						
	221-222 (10)			267-268 (10)	287-288 (10)	

289-296 (9)
291-294 (4)
293-296 (4)
295-296 (3)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 2

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UNIT	1	2	3	4	5	6	7	8
PAGES	1-6	7-30	31-52	53-70	71-96	97-140	141-178	179-198
I. SET CONCEPTS								
1. Compare sets Equivalent	1(6) / CT(1) 2(6)/CT(1)							198(4)
Non-equivalent								
2. Recognize and relate concepts of set, number, numeral								
Sets less than 10	3-5(10) / CT(2)							
Sets of 10		7(7)/CT(4)						
3. Relate operations on whole numbers to sets			31-2, 35, 37 (10)/CT(1) 45-6(6) / CT(1)					
Addition-joining			39-40, 43 (10)/CT(1)					
Subtraction-comparing								
Subtraction-separating								
Multiplication-joining								
Multiplication-pairing								
Division-separating								
II. PLACE VALUE								
1. Recognize names and place values for whole numbers								
Concept of ten								
Concept of hundred		7-12(10) / CT(2) 23-4(2) / CT(2)						
Concept of thousand								189-90, 193- 4/CT(1) CT(2)
2-3 digit numerals							155(3)	
3-4 digit numerals		7-30(10) / CT(8) 28-9(10)						179-99(10) / CT(2)
2. Associate numerals and place value with structured groups of objects								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 2

UNIT PAGES	1 1-6	2 7-30	3 31-52	4 53-70	5 71-96	6 97-140	7 141-178	8 179-198
2 digits		8-10(10)/ CT(2)			75(10)			180-88(10)
3-digits		27-30(10) CT(2)						182, 189-98(10)
4-digits								
3. Relate place value and money								
Pennies		12(4)/CT(1)				131(4)		
Nickles						131(2)		
Dimes		12(6)/CT(1)				131(2)		
Quarters								
Half-dollars						131(4)		
III. OPERATIONS								
1. Add whole numbers								
2. Subtract whole numbers								
3. Recognize inverse relationship between addition and subtraction								
4. Identify relationship between multiplication and Repeated addition								
Arrays								
5. Divide whole numbers by partitioning sets								
IV. SEQUENCES								
1. Place numerals in counting sequence								
Within a decade								
To one-hundred								
Above one-hundred		13(7)/CT(1)						181(5)/CT(2)
To one-thousand		14-16, 21-2, 25-6(10)						182-4, 190,
		30(3)						192(10)
2. Place numerals in skip-counting sequence								
By 10								
By 100, 1000								
By 3, 4, 5								

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ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 2

UNIT PAGES	1 1-6	2 7-30	3 31-52	4 53-70	5 71-96	6 97-140	7 141-179	8 179-198
2. Recognize families of facts. Addition-subtraction				52(8)/CT(1)		103(5)		
VIII. EQUATIONS AND SOLUTIONS								
1. Write solution to: Addition equations			31-2, 35, 37 (10)/CT(5)		CT(3)	99-102(10)		
--Missing addend			39-40, 43 (10)/CT(4)			99, 101-2 (10)		
Subtraction equations								
--Missing addend								
Multiplication equations Equations involving parentheses								
(See VI-2)								
IX. NUMBER LINE								
1. Represent order of whole numbers								
2. Represent operations								
Addition								
--Missing addends								
--Rearranging addends								
Subtraction								
Multiplication								
3. Write addition-subtraction equations using the number line								
X. BASIC PRINCIPLES								
1. Recognize and use basic principles for operations								
Associativity (addition)								
Commutativity (addition)								
Commutativity (multipli- cation								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 2

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UNIT PAGES	1 1-6	2 7-30	3 31-52	4 53-70	5 71-96	6 97-140	7 141-178	8 179-198
Identity elements (addition-multiplication) Rearranging addends							143-6, 148 (10)	
XI. PROCESSES (ALGORITHMS)								
1. Use algorithms for addition								
2-digit numerals-sums less than 100								
--Without regrouping					81-88, 91-2 (10)/CT(3)	97, 123(10)	148-64, 176 (10)/CT(4) 155-6(10)/ CT(1)	
--With regrouping								
2-digit multiples of 10								
3-4 digit numerals								
--Without regrouping								
Column addition								
2. Use algorithm for subtraction								
2-digit numerals								
--Without regrouping								
--Readiness for regrouping							169-70(10)	
--With regrouping								
2-digit multiples of 10								
3-4 digit numerals							165-6(10)	
3. Use algorithms for multiplication								
4. Use algorithms for division								
XII. RATIONAL NUMBERS								
1. Recognize fractions								
1/2								
1/3								
1/4								
1/5								
XIII. RATIO-PROPORTION								

UNIT PAGES	1-6	2 7-30	3 31-52	4 53-70	5 71-96	6 97-140	7 141-178	8 179-198
XIV. PROBLEM SOLVING								
1. Solve reasoning problems using								
Addition			53(10) 69(3)		91(5)	105-6, 117 (10)	65(6)	185(10)
Subtraction						132(4)		
Multiplication								
Inequalities								
Money								
2. Solve word problems with								
Addition				55(4)/CT(1)		CT(1)	154, 161, 163 (10)/CT(2)	
Subtraction				67(3)/CT(1)		113(3)/ CT(1)	171(4)	
Multiplication								
Inequalities								
Money			38(6)/CT(1)	CT(2)		123, 125, 127 (10)		197(4)
Liquid Measure								
Varied Applications				67, 69(4)		111, 119, 125, 129(10)	173, 175(7)	
XV. LOGIC								
1. Use informal logic in developing concepts of computation and problem solving								
XVI. NUMBER THEORY								
1. Identify properties of special sets of whole numbers			53(2)		91(5)/CT(1)	105(2)	165(2)	185(8)
Odd and even numbers								
Sums of odd and even numbers								
XVII. ESTIMATION								
1. Compare sum or difference of tens with a given numeral (readiness for regrouping)								

(See XI)

UNIT	1	2	3	4	5	6	7	8
PAGES	1-6	7-30	31-52	53-70	71-96	97-140	141-178	179-198
XVIII. MEASUREMENT								
1. Recognize and use systems for linear measurement								
Inches								
Centimeters								
Concept of length (general units)								
2. Recognize and use systems for measure of volume								
Cups								
Gallons								
Pints								
Quarts								
3. Recognize and use system for measure of time								
Half-hour intervals						133-4(10) 135-6(10)		
5-minute intervals								
XIX. GEOMETRY								
1. Identify and construct basic figures								
Line segments								
Triangles								
Circles								
Squares								
Rectangles								
2. Identify congruent shapes								
3. Identify similar shapes								
XX. GRAPHS AND SCALE DRAWINGS								
1. Read maps in solving word problems								
2. Use charts to solve computation problems								
XXI. SPECIAL TOPICS								
1. Tell time	(See XVIII)							
2. Identify and interpret Roman numerals	(See VI-I)							
CUMULATIVE REVIEWS ("Keeping in Touch")								
						139-40(10)	177-78(10)	

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 2

UNIT PAGES	9 199-208	10 209-220	11 221-240	12 241-246	13 247-268	14 269-288	15 289-296
I. SET CONCEPTS							
1. Compare sets Equivalent							
Non-equivalent							
2. Recognize and relate concepts of set, number, numeral							
Sets less than 10							
Sets of 10							
3. Relate operations on whole numbers to sets							
Addition-joining							
Subtraction-comparing							
Subtraction-separating							
Multiplication-joining							
Multiplication-pairing					247-53(10)/ CT(4) 261-64(10)/ CT(1)		
Division-separating							
II. PLACE VALUE							
1. Recognize names and place values for whole numbers							
Concept of ten							
Concept of hundred							
Concept of thousand							
2-3 digit numerals							
3-4 digit numerals							
2. Associate numerals and place value with structured groups of objects							
2-digits							
3-digits							
4-digits							
	202(10)		223-4(10)/ CT(2)				

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 2

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UNIT	9	10	11	12	13	14	15
PAGES	199-208	208-220	221-240	241-246	247-268	269-288	289-290
3. Relate place value and money							
Pennies						269(10)/ CT(1)	
Nickles						269(10)/ CT(2)	
Dimes						269(10)/ CT(2)	
Quarters						271(3)/ CT(2)	
Half-dollars							
III. OPERATIONS							
1. Add whole numbers							
2. Subtract whole numbers							
3. Recognize inverse relationship between addition and subtraction							
4. Identify relationship between multiplication and Repeated addition							
Arrays							
Divide whole numbers by partitioning sets					253-4, 256 (10)/CT(1) 257(10)/ CT(3)		
IV. SEQUENCES							
1. Place numerals in counting sequence					267-8(8)/ CT(1)		
Within a decade							
To one-hundred							
Above one-hundred							
To one thousand							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 2

UNIT PAGES	9 199-208	10 209-220	11 221-240	12 241-246	13 247-268	14 269-288	15 289-296
2. Place numerals in skip-counting sequence By 10 By 100, 1000 By 3, 4, 5	199(1) 199(2)			246(1)/ CT(2) 245-6(2)/ CT(2)			
V. INEQUALITIES 1. Compare two whole numbers using $<$, $>$ or by identifying larger or smaller number Ones and decades Within a decade Hundreds Thousands							
VI. NOTATION 1. Identify and interpret symbols Write arabic numerals 0-9 Roman numerals Symbols for fractions 2. Identify terms and symbols related to mathematical operations + - x ÷ () "Vertical form" (addition) "Expanded notation"							
					249-66(10)/ CT(4) 267-8(8)/ CT(1)		

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 2

UNIT	9	10	11	12	13	14	15
PAGES	199-208	209-220	221-240	241-246	247-268	269-288	289-296
VII. NUMBER FACTS							
1. Recognize and recall: Sums and differences less than or equal to 10 Sums and differences 11-18 Products with factors 0-5					247-66(10)/ CT(9)		
2. Recognize families of facts Addition-subtraction (See III-2)							
VIII. EQUATIONS AND SOLUTIONS							
1. Write solution to: Addition equations --Missing addend Subtraction equations --Missing addend Equations involving parentheses					249(2)/ CT(4)		
IX. NUMBER LINE							
1. Represent order of whole numbers							
2. Represent operations Addition --Missing addends --Rearranging addends Subtraction Multiplication					254-5(4)/ CT(1)		
3. Write addition-subtraction equations using the number line							
X. BASIC PRINCIPLES							
1. Recognize and use basic principles for operations							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 2

UNIT PAGES	9 199-208	10 209-220	11 221-240	12 241-246	13 247-268	14 269-288	15 289-296
Associativity (addition) Commutativity (addition) Commutativity (multiplication)					247-8, 252-3 (10) 252 (4)		
Identity elements (addition-multiplication) Rearranging addends							
XI. PROCESSES (ALGORITHMS) 1. Use algorithms for addition 2-digit numerals-sums less than 100 --Without regrouping --With regrouping 200(2)		CT(1) 211-20(10)/ CT(8)				269(10)	
2-digit multiples of 10 3-4 digit numerals --Without regrouping 200, 204(10)/ CT(2) 203(5)							
Column addition Use algorithm for subtraction 2-digit numerals --Without regrouping --Readiness for regrouping --With regrouping		209-11(10)	221-2(10)/ CT(2) 221-36(10)/ CT(2)				
2-digit multiples of 10 3-4 digit numerals 204-5(10) CT(2)							
3. Use algorithms for multiplication					249(2)/ CT(2)		
4. Use algorithms for division					267-8(8)/ CT(1)		

MS MATH
ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 2

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UNIT	9	10	11	12	13	14	15
PAGES	199-208	209-220	221-240	241-246	247-268	269-288	289-296
XII. RATIONAL NUMBERS							
1. Recognize fractions							
1/2						275, 279 (5)	
1/3						276, 279, 280 (9)	
1/4						277, 280 (6)	
1/5						278 (4)	
XIII. RATIO-PROPORTION							
XIV. PROBLEM SOLVING							
1. Solve reasoning problems using							
Addition	202 (10)	210 (10)/ CT (2)	237 (6)/ CT (1)				
Subtraction							
Multiplication		209 (10)/ CT (1)					
Inequalities							
Money							
2. Solve word problems with							
Addition	207 (7)/ CT (1)	207, 217, 219 (10)/CT (2)	231, 233, 235 (10)/CT (1)		250, 262, 265 -6 (10)/ CT (1)		
Subtraction							
Multiplication							
Inequalities							
Money						271 (4)/ CT (1)	
Liquid Measure						286 (4)/ CT (1)	
Varied Applications							

ADELSON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 2

UNIT	9	10	11	12	13	14	15
PAGES	199-208	209-220	221-240	241-246	247-268	269-288	289-296
XV. LOGIC			237(3)/ CT(1)				
1. Use informal logic in developing concepts of computation and problem solving							
XVI. NUMBER THEORY				241-4(10)/ CT(6) 243-4(8)/ CT(1)			
1. Identify properties of special sets of whole numbers							
Odd and even numbers							
Sums of odd and even numbers							
XVII. ESTIMATION							
1. Compare sum or difference of tens with a given numeral (readiness for regrouping)							
XVIII. MEASUREMENT						282-4(10)/ CT(1) 282-4(10)/ CT(1) 281(9)	
1. Recognize and use systems for linear measurement							
Inches							
Centimeters							
Concept of length (general units)							
2. Recognize and use systems for measure of volume						285(3) 285(2)/ CT(1) 285(5) 285(4)/ CT(1)	
Cups							
Gallons							
Pints							
Quarts							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 2

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UNIT PAGES	9 199-208	10 209-220	11 221-240	12 241-246	13 247-268	14 269-288	15 289-296
3. Recognize and use system for measure of time Half-hour intervals 5-minute intervals							
XIX. GEOMETRY							
1. Identify and construct basic figures							
Line segments							
Triangles							
Circles							291-2(10)
Squares							289-90(3)
Rectangles							289(1)
2. Identify congruent shapes							289-90(2)
3. Identify similar shapes							289-90(3)
							293-5(10)
							296(4)
XX. GRAPHS AND SCALE DRAWINGS							
1. Read maps in solving word problems							
2. Use charts to solve computation problems					257, 263-4 (10)		
XXI. SPECIAL TOPICS							
1. Tell time							
2. Identify and interpret Roman numerals							
CUMULATIVE REVIEWS ("Looking Back")			239-240(10)				

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

GEOMETRY

UNIT 2
128-135

UNIT 4
84-127

UNIT 3
52-83

UNIT 1
44-51

UNIT 2
20-43

UNIT 1
1-19

UNIT
PAGES

SET CONCEPTS

1. Recognize and relate concepts of set, number, numeral
2. Identify operations on sets

Intersection

Product set

3. Relate operations on whole numbers to sets

Subtraction-comparing

Multiplication-joining

Multiplication-pairing

Division-separating

Addition-joining

Subtraction-separating

4. Relate sets and subsets to fractional numbers^c

II. PLACE VALUE

1. Recognize names and place values for whole numbers

Concept of digit

2 - digit numerals

2(0), 1(7)
2-6, 8(10)
1, 2(10) /
CT(2)

1(10)

28-9(10) /
CT(2)

8(2) 8/CT
(2)

8(2)

120-3(6)

84-5(10)
30(4) / CT
(1)
120-3(6)
42(3) / CT
(1)

136-8, 149,
154-5, 158
(10) 44, 51
(10) / CT(5)

156(0)

^c Numerals that are underlined refer to pages and corresponding numbers of items (to 10) in the student workbook.

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

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UNIT PAGES	1 1-19	2 20-43	GEOMETRY UNIT 1		GEOMETRY UNIT 2		
			44-51	52-83	84-127	128-135	136-163
3 and 4 digit numerals	7-17(10)2, 3,6(10)/CT (10) 14-18(10) 18(5)						164-189
5 and 6 digit numerals Millions							
Associate numerals and place values with structured groups of objects							
Grouped by tens	2-4(10)1(8) /CT(1)						
Grouped by hundreds	6-9(7)2,3- (9)						
Regrouping with 2-digit numerals				72(10)25 (10)/CT(2)			
Related to money: pennies and dimes	5(6)			52-3(10)			
OPERATIONS			(See also XI-Processes (Algorithms))				
1. Add whole numbers in- volving sums of 10, 20, 30, 40, ...				54-5(10)18- 19(10)			
2. Recognize inverse re- lationship between Addition and subtraction		20-1,26(10) 12(10)					144-5,149, 152,156(10) 49,53(10)/ CT(6)
Multiplication and divi- sion							140-1,148 (10)46(4)/ CT(2)
3. Identify relationship be- tween					86-7(10)/ CT(3)		
Multiplication and re- peated addition							
Division and repeated subtraction							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

UNIT PAGES	1 1-19	2 20-43	GEOMETRY		3 52-83	4 84-127	GEOMETRY		5 136-163	6 164-189
			UNIT 1 44-51	UNIT 2 128-135			UNIT 1 44-51	UNIT 2 128-135		
4. Multiply whole numbers By factors of 10 and 100. By factors of 20, 30, 40,...										
5. Identify related products (3×4 , 3×40 , 3×400 , etc.)										
6. Divide with whole numbers: Quotients with zero endings										
7. Add three or more numbers		$\frac{31(10)11}{(10)/CT(3)}$								
IV. SEQUENCES										
1. Place numerals in counting sequence										
2-digit numerals										
3 and 4 digit numerals										
Odd and even numbers										
Relate place value and counting										
2. Counting										
V. INEQUALITIES										
1. Compare two whole numbers using $<$, $>$ or by designating larger, or smaller of given numbers										
2. Use inequalities intuitively in computing approximations based on logical reasoning										
VI. NOTATION										

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 3

	UNIT PAGES	1 1-19	2 20-43	GEOMETRY		3 52-83	4 84-127	GEOMETRY		5 136-163	6 164-189
				UNIT 1 44-51	UNIT 2 128-135			UNIT 1 44-51	UNIT 2 128-135		
I. Identify terms related to mathematical operations* Addend and sum			24-5 (10) / CT (2)								
Factor and product							92 (10) / CT (2)				
Quotient										137 (3)	
2. Recognize and interpret* symbols											
Variable (n)			24-5 (10)							136 (5)	
Variable (n) $\sqrt{\quad}$ \$						78 (10)					
VII. NUMBER FACTS											
1. Recognize and recall sums (Addition-subtraction facts)*			24-7 (10) 33-7 (10) 11, 13 (10)								
Sums to 9											
Sums of 10-19											
2. Recognize and recall products for factors 0 - 9 (multiplication facts)							106-15 (10) 35-8 (10) / CT (3)				
3. Recognize and recall division facts											
VIII. EQUATIONS AND SOLUTIONS											
1. Determine solutions to addition and subtraction equa- tions*			20-8, 36-7 (10) 8 (10) / CT (3)			CT (1)				138, 152, 156 (10) / CT (1)	

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ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

UNIT PAGES	1 1-19	2 20-43	3 52-83	4 84-127	5 136-163	6 164-189
	GEOMETRY UNIT 1 44-51	GEOMETRY UNIT 2 128-135	GEOMETRY UNIT 3 136-163	GEOMETRY UNIT 4 164-189	GEOMETRY UNIT 5 136-163	GEOMETRY UNIT 6 164-189
Multiplication equations*						
Division equations*						
2. Write equation to describe pictured operation on sets						
IX. NUMBER LINE						
1. Represent operations on the number line						
Addition and subtraction						
Multiplication						
Division						
BASIC PRINCIPLES						
1. Recognize and use basic principles for addition and subtraction operations						
Commutative principle (addition)						
Associative principle and use of parentheses (addition)						
Rearranging addends						
Grouping addends (sums of 10)						
Grouping addends (sums between 10 and 19)						
2. Recognize and use basic principles for multiplication and division operations						
Commutative principle (multiplication)						

ADDISON-WESLEY, INSTRUCTIONAL OUTCOMES
GRADE 3

-54-

GEOMETRY

UNIT 2

128-135

5

136-163

6

164-189

GEOMETRY

UNIT 1

44-51

2

20-43

1

1-19

3

52-83

4

84-127

100(8)32(8)

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ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 3GEOMETRY
UNIT 1
44-51UNIT
PAGES1
1-192
20-433
52-834
84-127GEOMETRY
UNIT 2
128-1355
136-1636
164-189

4. Use algorithm for division
Relating division to subtraction of multiples of divisor
Remainders in division
Checking division
Regular algorithm-
single-digit divisor and
2-digit quotient

XII. RATIONAL NUMBERS

1. Recognize fractions as descriptors of part-whole relationship
 $\frac{1}{2}$
 $\frac{1}{3}$
 $\frac{1}{4}$
 $\frac{1}{5}$
 $\frac{1}{6}$
 $\frac{1}{8}$

Equivalent fractions
Numerators greater than one

2. Relate fractions to concept of number pair

3. Order of rational numbers

XIII. RATIO AND PROPORTION

XIV. PROBLEM SOLVING**

1. Solve verbal problems involving special topics

Travel (odometer) 15 (4) 6 (4)

Science

Games (scoring)

Shopping

Speed

Space travel

Time

64 (6)

65 (7)

93 (5)

185 (5)

** There is no explicit sequence for developing skills in this domain. Verbal problems occur in all chapters. The entries here are illustrative and not exhaustive.

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

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GEOMETRY

UNIT 2

128-135

136-163

164-189

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PAGES

UNIT

1

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3

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ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 3

UNIT PAGES	1 1-19	2 20-43	GEOMETRY UNIT 1 44-51	3 52-83	4 84-127	GEOMETRY UNIT 2 128-135	5 136-163	6 164-189
XVI. NUMBER THEORY								
1. Recognize properties of special sets of whole numbers								
Odd and even numbers								
Odd-even sums and products								
Factors and multiples								
Prime numbers								
XVII. ESTIMATION								
1. Estimate results of mathematical operations								
Products								
2. Estimate measurements								
Area								
Distance and length								181 174(4)
XVIII. MEASUREMENT								
1. Recognize and use systems for linear measurement								172-3, 177 (10) 56-7 (10) CT(1) 171, 174-5 (10) 56-7 (10) CT(4) 176, 57(8) / CT(1) 171(1) 56 (2) / CT(2) 171(1) / CT (1) 171(1) 164-71(10) / CT(2)
Inch (nearest inch)								
--Half inch (nearest half inch)								
Foot								
Yard								
Mile								
General units	15(0)							

UNIT PAGES	GEOMETRY UNIT 1			GEOMETRY UNIT 2			5 136-163	6 164-189
	1 1-19	2 20-43	3 44-51	4 52-83	5 84-127	6 128-135		
2. Recognize and use systems for measuring volume Cup, pint, quart								184-5 (10) 60 (10)/CT (2) 184-5 (7) 60 (4)/CT (1) 184-5 (5) 60 (3) 164-66, 182-3 (10)/ CT (1) 182 (0) 59 (10) CT (3) CT (2)
Gallon								
Ounce (liquid)								
General units of volume								
Cubic inch, centimeter								
- Volume of a cube Volume of irregular objects								
3. Recognize and use systems for measuring area Square unit --General								164-7, 178- 9 (10)/CT (1) 178 (0) 58 (10)
--Inch, centimeter								
4. Determine area (by count- ing units) Rectangle								178-9/CT (1) 178-9 (2) 180-1 (6) 58 (8)/CT (2)
Square Triangle Irregular shapes								
5. Recognize units of time- second, minute, hour, day, week, month								

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ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

UNIT PAGES	1 1-19	2 20-43	GEOMETRY UNIT 1 44-51	3 52-83	4 84-127	GEOMETRY UNIT 2 128-135	5 136-163	6 164-189
XIX. GEOMETRY								
1. Recognize and construct basic figures								
a) Line								
Lines through a common point			44 (1)					
Line through two points			44 (1)					
b) Ray								
Rays from common point			44 (1)					
c) Line segments								
Line segment between two points			44 (1)					
Number of line segments in a figure			44 (3)					
Midpoint of line segment								
d) Angle						134 (3)		
Angles in a triangle			44 (1)					
Right angles			44 (1)					
Right angles in a circle								
2. Construct geometric shapes and state relationships among various components								
a) Triangle								
Points inside and outside			46 (1)					
Sum of angles in a triangle			47 (2)					
Right triangle								
--Leg, hypotenuse								
--Pythagorean relationship (non-formal)								
b) Quadrilateral								
Points inside and outside			48					
side			48 (1)					
Triangles in a quadrilateral			48 (1)					

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 3

60-

UNIT PAGES	1 1-19	2 20-43	GEOMETRY UNIT 1 44-51	3 52-83	4 84-127	GEOMETRY UNIT 2 128-135	5 136-163	6 164-189
Quadrilaterals in a triangle			48 (1)					
Sum of angles in a quadrilateral			49 (1)					
c) Polygon			50-1 (3)					
Vertices, diagonal			50-1 (4)					
Number of diagonals			50-1 (4)					
Pentagon (name)			50-1 (0)					
Hexagon (name)			50-1 (0)					
d) Parallel Lines						128-35 (5) 130-1 (6)		
e) Angles and parallel lines						131 (3)		
Relationship between angles formed by a transversal						131-5 (4)		
f) Parallelogram						132-3 (3)		
Triangles in parallelogram								
Rhombus								
g) Circle								
Center of a circle								
Right angles inside a circle								
h) Rectangle								
Triangles in a rectangle								
Square								
i) Symmetry								
XX. GRAPHS AND SCALE DRAWINGS								
1. Recognize and use concepts in coordinate geometry								
Coordinates								
Coordinate axis								
Number pairs (graphing)								

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ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

	UNIT PAGES	1 1-19	2 20-43	GEOMETRY UNIT 1 44-51	3 52-83	4 84-127	GEOMETRY UNIT 2 128-135	5 136-163	6 164-189
2. Develop and interpret simple graphs									
3. Graphs of functions Graphs with negative numbers Interpret charts and maps					65, 70, 74-5 (10)				
XXI. SPECIAL TOPICS									
1. Recognize concept of a "function machine"									
Addition and subtraction									
Multiplication and division									
Repeated subtraction									
Even numbers									
Approximate simple probabilities									
CHAPTER REVIEW									
CUMULATIVE REVIEWS ("Keeping in Touch")									
		19 (10) 7 (10)	43 (10) 17 (10)		82-3 (10) 29 (10)	126-7 (10) 43 (10)		162 (10) 55 (10)	188-9 (10) 61 (10)
			42 (10)		66-7, 80-1 (10)	94-5, 124-5 (10)		150-1, 160- 1 (10)/CT (10)	186-7 (10)

GEOMETRY UNIT 3 190-197		GEOMETRY UNIT 4 246-253		GEOMETRY UNIT 4 246-253		GEOMETRY UNIT 4 246-253		GEOMETRY UNIT 4 246-253		GEOMETRY UNIT 4 246-253	
UNIT PAGES		UNIT PAGES		UNIT PAGES		UNIT PAGES		UNIT PAGES		UNIT PAGES	
I. SET CONCEPTS											
1. Recognize and relate concepts of set, number, numeral											
2. Identify operations on sets											
Intersection											
Product set											
3. Relate operations on whole numbers to sets											
Subtraction-comparing											
Multiplication-joining											
Multiplication-pairing											
Division-separating											
Addition-joining											
Subtraction-separating											
4. Relate sets and subsets to fractional numbers											
254-5 (2) 78 (1)											
286-7 (8)											
II. PLACE VALUE											
1. Recognize names and place values for whole numbers											
Concept of digit											
2-digit numerals											
3 and 4 digit numerals											
5 and 6 digit numerals											
Millions											
2. Associate numerals and place values with structured groups of objects											
Grouped by tens											
Grouped by hundreds											
Regrouping with 2-digit numerals											
Related to money:											
pennies and dimes											
79 (6)											

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

UNIT PAGES	GEOMETRY UNIT 3 190-197	7 198-207	8 208-245	GEOMETRY UNIT 4 246-253	9 254-285	10 286-295
III. OPERATIONS (See also XI-Processes (Algorithms))						
1. Add whole numbers involving sums of 10, 20, 30, 40,...						
2. Recognize inverse relationship between Addition and subtraction						
3. Identify relationship between Multiplication and division					$\frac{78,80(10)}{CT(2)}$	
4. Multiply whole numbers By factors of 10 and 100					$\frac{254-5(4)}{78,82-3(10)} / CT(1)$	
5. Identify related products (3 x 4, 3 x 40, 3 x 400, etc.)					$\frac{79(10)}{79(10)}$	
6. Divide with whole numbers Quotients with zero endings					$\frac{79-80(10)}{256-7(10)}$	
7. Add three or more numbers						

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

GEOMETRY
UNIT 3
190-197

UNIT
PAGES

7 198-207
8 208-245
9 254-285
10 286-295

GEOMETRY
UNIT 4
246-253

IV. SEQUENCES

1. Place numerals in counting sequence
 - 2-digit numerals
 - 3 and 4 digit numerals
 - Odd and even numbers
 - Relate place value and counting
- 2.

V. INEQUALITIES

1. Compare two whole numbers using $<$, $>$ or by designating larger, or smaller of given numbers
2. Use inequalities intuitively in computing approximations based on logical reasoning

VI. NOTATION

1. Identify terms related to mathematical operations
 - Addend and sum
 - Factor and product
 - Quotient
2. Recognize and interpret symbols:
 - Variable (n)
 - $\sqrt{\quad}$
 - $\$$

VII. NUMBER FACTS

1. Recognize and recall sums (Addition-subtraction facts)
 - Sums to 9
 - Sums of 10-19

(See XVI-Number Theory)

239 (0)

272 (10)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

UNIT PAGES		GEOMETRY UNIT 3 190-197		GEOMETRY UNIT 4 246-253		GEOMETRY UNIT 4 254-285		GEOMETRY UNIT 4 286-295	
		7 198-207	8 208-245			9 254-285		10 286-295	
2.	Recognize and recall products for factors 0 - 9 (multiplication facts)		230 (10)						
3.	Recognize and recall division facts								
VIII. EQUATIONS AND SOLUTIONS									
1.	Determine solutions to addition and subtraction equations								
	Multiplication equations								
	Division equations								
2.	Write equation to describe pictured operation on sets								
IX. NUMBER LINE									
1.	Represent operations on the number line								
	Addition and subtraction								
	Multiplication								
	Division					254-5 (3) 78 (1)			
X. BASIC PRINCIPLES									
1.	Recognize and use basic principles for addition and subtraction operations								
	Commutative principle (addition)								
	Associative principle and use of parentheses (addition)								
	Rearranging addends								
	Grouping addends (sums of 10)								
	Grouping addends (sums between 10 and 19)								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

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UNIT PAGES	GEOMETRY UNIT 3 190-197	7 198-207	8 208-245	GEOMETRY UNIT 4 246-253	9 254-285	10 286-295
2. Recognize and use basic principles for multiplication and division operations						
Commutative principle (multiplication)			CT(1)			
Associative principle and use of parentheses (multiplication)			216-21(10) 68-9(10)/ CT(1)			
Rearranging factors						
Addition-multiplication						
Zero in multiplication						
One in multiplication						
Zero in division						
One in division						
XI. PROCESSES (ALGORITHMS)						
1. Use algorithm for addition of whole numbers						
Addition: 2 and 3 digit numerals						
--No renaming						
--Renaming						
2. Use algorithm for subtraction on whole numbers						
Subtraction: 2-digit (no renaming)						
: 2-digit (renaming)						
: 3-digit (no renaming)						
3. Use algorithm for multiplication on whole numbers						
One 2-digit factor			222-6,230-3 (10)70-2(10) /CT(2)			

MS MATH
ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 3

UNIT PAGES	GEOMETRY UNIT 3		GEOMETRY UNIT 4	
	190-197	198-207	208-245	246-253
One 3-digit factor			234-7 (10) 74 (10) / CT (1) 236 (10) 74 (5) / CT (1) 241 (10)	254-285
One factor 4 or more digits				
Two 2-digit factors Use algorithm for division				
Relating division to subtraction of multiples of divisor				262-7 (10) 84-87 (10) / CT (1) 278-9 (10) 91-2 (10) / CT (2) 280 (10) 92 (8) 272-4 (10) 88-9 (10) / CT (5)
Remainders in division				
Checking division				
Regular algorithm- single-digit divisor and 2-digit quotient				
XII. RATIONAL NUMBERS				
1. Recognize fractions as descriptors of part-whole relationship				
1/2				286-9 (4) 94 (6) / CT (3) 286-7 (7) 94 (6) / CT (1) 286-9 (7) 94 (4) / CT (1) 286-9 (7) 95 (4) / CT (2)
1/3				
1/4				
1/5				

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

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UNIT PAGES	GEOMETRY UNIT 3 190-197	7 198-207	8 208-245	GEOMETRY UNIT 4 246-253	9 254-285	10 286-295	Division
3. Solve verbal problems involving fractions					268-9, 275-6, 281, 283 (10)/ST(2)		0
4. Solve problems involving money recognition and values Pennies Nickels Dimes Quarters Half dollars Dollars and cents			211 (3)			289 (8)	
XV. LOGIC 1. Use informal logic in computation					271 (10)		
XVI. NUMBER THEORY 1. Recognize properties of special sets of whole numbers Odd and even numbers		198-200 (10) 62 (10)/CT (3) 200 (10)/CT (2) 201-3 (10) 63 (10)/CT (10) 204-5 (10) 64 (7)/CT (5)					
Odd-even sums and products Factors and multiples							
Prime numbers							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 3

UNIT PAGES	GEOMETRY UNIT 3 190-197	7 198-207	-8 208-245	GEOMETRY UNIT 4 246-253	9 254-285	10 286-295
XVII. ESTIMATION						
1. Estimate results of mathematical operations Products			238-9 (10) $\frac{75(10)}{(4)}$ CT			
2. Estimate measurements Area Distance and length						
XVIII. MEASUREMENT						
1. Recognize and use systems for linear measurement Centimeter Inch (nearest inch) --Half inch (nearest half inch) Foot Yard Mile General units						
2. Recognize and use systems for measuring volume Cup, pint, quart Gallon Ounce (liquid) General units of volume Cubic inch, centimeter Volume of a cube Volume of irregular objects						
3. Recognize and use systems for measuring area Square unit --General --Inch, centimeter						

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 3

GEOMETRY

UNIT
PAGESUNIT 3
190-197

8

208-245

UNIT 4

246-253

9

254-285

10

286-295

4. Determine area (by counting units)

Rectangle
Square

Triangle

Irregular shapes

5. Recognize units of time-second, minute, hour, day, week, month

227 (7)

XIX. GEOMETRY

1. Recognize and construct basic figures

a) Line

Lines through a common point

Line through two points

b) Ray

Rays from common point

c) Line segments

Line segment between two points

Number of line segments in a figure

Midpoint of line segment

d) Angle

Angles in a triangle

Right angles

Right angles in a circle

190-1(3)

192-3(1)

2. Construct geometric shapes and state relationships among various components

a) Triangle

Points inside and outside

Sum of angles in a triangle

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES. GRADE 3

UNIT PAGES	GEOMETRY UNIT 3 190-197	7 198-207	8 208-245	GEOMETRY UNIT 4 246-253	9 254-285	10 286-295
Right triangle --Leg, hypotenuse --Pythagorean relation- ship (non-formal) b)Quadrilateral Points inside and out- side Triangles in a quadri- lateral Quadrilaterals in a triangle Sum of angles in a quadrilateral c)Polygon Vertices, diagonal Number of diagonals Pentagon (name) Hexagon (name) d)Parallel Lines e)Angles and parallel lines Relationship between angles formed by a transversal f)Parallelogram Triangles in paral- lelogram Rhombus g)Circle Center of a circle Right angles inside a circle h)Rectangle Triangles in a rectangle Square i)Symmetry	194-5 (4) 194 (2) 194-5 (1)					
	191 (1) 192-3 (5) 193 (1) 193 (1) 194-5 (1) 194-5 (2) 195 (1)					

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 3

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UNIT PAGES	GEOMETRY UNIT 3 190-197	7 198-207	8 208-245	GEOMETRY UNIT 4		10 286-295
				246-253	9 254-285	
XX. GRAPHS AND SCALE DRAWINGS				246-53 (10)		
1. Recognize and use concepts in coordinate geometry				249-53 (10)		
Coordinates				246-9 (10)		
Coordinate axis				248-51 (10)		
2. Number pairs (graphing)				250-1 (5)		
Develop and interpret simple graphs				250-1 (5)		
3. Graphs of functions				252-3 (3)	261 (9)	
Graphs with negative numbers			240 (10)			
Interpret charts and maps						
XXI. SPECIAL TOPICS						
1. Recognize concept of a "function machine"					258 (10) 81 (10)	
Addition and subtraction					259 (10)	
Multiplication and division						
2. Repeated subtraction		198-9 (8)				
Even numbers						
Approximate simple probabilities						
CHAPTER REVIEW						
		207 (10)	244-45 (10)		284-85 (10)	295 (10)
		65 (10)	77 (10)		93 (10)	96 (10)
CUMULATIVE REVIEWS ("Keeping in Touch")		206 (10)	228-9, 242-3 (10)		260, 270	294 (10) / CT (10)

MS MATH
ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 3

UNIT PAGES	GEOMETRY UNIT 3 190-197	7 198-207	8 208-245	GEOMETRY UNIT 4 246-253	9 254-285	10 286-295
1/6						288-9(5) 95(4) 288-9(3) 95(4) 292-3(4)/ CT(4) 290-1(10) 94-5(10)/ CT(7)
1/8						286-91(2)
Equivalent fractions						289(6)/ CT(2)
Numerators greater than one						
2. Relate fractions to concept of number pair						
3. Order of rational numbers						
XIII. RATIO AND PROPORTION						
XIV. PROBLEM SOLVING						
1. Solve verbal problems involving special topics						
Travel (odometer)						
Science						
Games (scoring)						
Shopping						
Speed						
Space travel			214-5(10) 231 227		277	
Time						
2. Solve problems embedded in short stories						
Addition and subtraction						
Multiplication			219, 223, 225 227, 231, 233 235, 237(10) 73, 76(10)/ CT(5)			
--and pairing						

--Thousands, hundreds,
tens and ones

	04-71	72-III	112-133	134-147	148-155	156-167
I. SET CONCEPTS						
1. Recognize and relate concepts of set, number and numeral	1(1)	22-23(10)/ CT(1)				
2. Relate operations on whole numbers to set operations		22-23(5) <u>7(2)</u>				
Addition						
Multiplication						
Division						
3. Relate sets and subsets to fractions						
Fractions						
Equivalent fractions						
Relate regions and sub-regions to fractions						
Fractions						
Equivalent fractions.						
Perform set operations						
Union						
Product sets (cross products)		22(4) <u>7(3)</u>				
II. PLACE VALUE						
1. Recognize the number of elements in sets grouped by						
--Tens and ones	2-3(10) <u>1(3)</u>					
--Hundreds, tens and ones	4,6(3) <u>1(2)</u>					
--Thousands, hundreds, tens and ones	6-7(3) <u>2(2)/CT(1)</u>					

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 4

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	UNIT PAGES		GEOMETRY UNIT 1					GEOMETRY UNIT 2	
	1 1-21	2 22-63	64-71	72-111	112-133	134-147	148-155	156-167	
4. Recognize the meaning of the words decade, century, millennium	10-11 (10)								
III. OPERATIONS									
1. Multiply and divide whole numbers	(See XI)								
2. Add and subtract rational numbers	(See XII-9)								
3. Recognize inverse operations									
Addition-subtraction		24 (10) $\frac{8(2)}{(1)}$ CT		76 (6) / CT (1)		CT (1)			
Multiplication-division									
SEQUENCES									
1. Identify a rule in a number sequence by providing the missing elements to continue the sequence	4 (3)	45 (10)							
V. INEQUALITIES									
1. Compare two whole numbers by									
Identifying number "less than" or "greater than" a specified number	9 (10) $\frac{4(10)}{(3)}$ CT	47 (10)							
Using symbols $<$, $>$, $=$	9 (10) $\frac{4(10)}{(3)}$ CT	47 (10)							
Writing the number which is a specified value "less than" or "greater than"	9 (10) $\frac{3,5(10)}{CT(3)}$								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

UNIT PAGES		1 1-21	2 22-63	GEOMETRY UNIT 1 64-71		3 72-111	4 112-133	5 134-147	GEOMETRY UNIT 2 148-155		6 156-167
2.	Compare two rational numbers by										
	Using symbols $<$, $>$, $=$ Agreeing or disagreeing with statements of in- equality										
3.	Compare two rational num- bers in mixed numeral nota- tion, Using symbols $<$, $>$, $=$										
4.	Recognize inequalities in estimation										
5.	Use symbols $<$, $>$, $=$ in comparing addition and sub- traction expressions	(See XVII-1)	60(10)								
VI. NOTATION											
1.	Relate two numerical quantities by the symbol $=$, or \neq										
(See also V-1, 2, 3 and 5)											
VII. NUMBER FACTS											
1.	Use multiplication facts for the digits 0 - 9 to complete a 10 by 10 multiplication table					83-85 (10) 23-24 (10)					
VIII. EQUATIONS AND SOLUTIONS											
1.	Determine solutions to arithmetic equations* Addition and subtraction		24, 34 (10) 8, 10 (10) / CT (4)			91-95 (10) 25 (10) / CT (4)				138-141, 144 145 (10) 38-41 (10) / CT (5)	
Multiplication and divi- sion											
Equations with rational numbers											

UNIT PAGES	GEOMETRY			GEOMETRY		
	1 1-21	2 22-63	3 72-111	4 112-133	5 134-147	6 148-155
IX. NUMBER LINE						
1. Illustrate order of rational numbers on the number line by indicating proper placement						
Fractions						
Mixed numerals						
2. Recognize operations re-presented on the number line						
Addition-subtraction of whole numbers						
Multiplication-division of whole numbers						
Addition-subtraction of rational numbers						
3. Represent moves on the number line with special numerals						
X. BASIC PRINCIPLES						
1. Recognize and use basic principles for addition-subtraction						
Commutative principle						
(addition)						
Associative principle						
and using parentheses						
2. Recognize and use basic principles for multiplication-division						
Commutative principle						
Associative principle						
and using parentheses						
Distributive principle						
Zero in multiplication						

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 4

UNIT PAGES	1 1-21	2 22-63	GEOMETRY		4 112-133	5 134-147	GEOMETRY	
			UNIT 1 64-71	UNIT 2 148-155			UNIT 2 148-155	UNIT 2 148-155
One in multiplication				82 (6) 21 (6) <u>94 (7)</u> 26 (5)/CT (1) 94 (10) <u>26 (10)/CT</u> (1)				156-167
Zero in division								
One in division								
XI. PROCESSES (ALGORITHMS)								
1. Add whole numbers								
Two single digit addends with multiple renaming								
2-digit addends with multiple renaming		34-35 (10) 7, 10-11 <u>(10)/CT (2)</u> 36-37 (10) 12 (10)/CT (1)						
3 or more digit addends with multiple renaming		38-40 (10) 13 (10)/CT (3)						
3 or more addends		34-35 (10) 10-11 (10)/ CT (2)						
2. Subtract whole numbers								
1-digit or 2-digit numeral with renaming		24-5, 49-50 (10) 8, 14 (10)/ CT (2) 49-52 (10) 14, 16 (10)/ CT (3) 52 (10) <u>15-16 (10)/</u> CT (1)						
1-digit, 2-digit or 3-digit numeral from a 3-digit numeral with renaming								
Numerals with more than 3-digits								
3. Relate multiplication to repeated addition				74 (10) 20 (7)/CT (1)				

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 4

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GEOMETRY

UNIT 1

2

1

UNIT

PAGES

3

4

5

6

156-167

4.	Multiply whole numbers 1-digit numeral by 1- digit numeral One or two 2-digit factors One or two 3-digit factors One or two 4 or more digit factors Three or more factors By factors of 10, 100 ... By factors of 20, 30 ...	1-21	22-63	GEOMETRY UNIT 1 64-71	72-111	112-133	134-147	148-155	156-167
5.	Identify related products (3×4 , 3×40 , 3×400 , etc.) Divide whole numbers Quotients by repeated sub- traction Quotients as missing fac- tors Special quotients (10, 20, 30 ...)				86(10)/CT (2) 86(10)		135-138(10) 38-39(10)/ CT(4) 134, 137, 145(10) 40-41(10)/ CT(4)		
6.	Quotients by group sub- traction Using estimation to help find quotients Quotients with remainders By multiples of 10 2-digit dividend by 1 or 2-digit divisor 3 or more digit dividend by divisors to 3-digits 2-digit divisors 2 and 3-digit quotients Quotients and checking				75(7) 20(4) 93(10) 25(10)		138-139(10) 40-41(10)/ CT(1) 140-1, 145 (10) 40-41(10)		
					92-3, 95, 98 (10)/CT(2)		140(10) 140(10)/ CT(3)		

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 4

UNIT PAGES	1-21	2 22-63	3 72-111	4 112-133	5 134-147	6 148-155	GEOMETRY UNIT 2 156-167
7. Apply function machine algorithm to describe operations with whole numbers.		29(10) 9(10)/CT (1)	100-1(10) 27(10)/CT (1)				
8. Use an intuitive algorithm for finding the arithmetic average for a set of numbers.							
XII. RATIONAL NUMBERS							
1. Relate sets and regions to fractions.							
2. Identify the terms numerator and denominator.							
3. Identify sets of equivalent fractions.							
By using subsets and subregions							
By multiplying numerator and denominator by the same number							
4. Test for equivalence of two fractions by cross multiplying.							
5. Relate rational numbers by rewriting.							
--Improper fractions to mixed numeral notation							
--Mixed numeral notation to improper fractions							
6. Compare fractions and mixed numerals using symbols or by indicating agreement or disagreement with inequality statements.							
7. Illustrate order of fractions and mixed numerals on the number line.							

UNIT PAGES	1 1-21	2 22-63	GEOMETRY		3 72-111	4 112-133	5 134-147	6 148-155	156-167
			UNIT 1 64-71	UNIT 2 148-155					
8. Recognize the representation of addition and subtraction of fractions on the number line	(See IX-2)								
9. Add and subtract rational numbers in fraction form									
10. Use rational numbers in fraction and mixed numeral form to express linear measure									
11. Use fractions to compare quantities or measures									
12. Identify fraction with lowest terms within a set of equivalent fractions									
XIII. RATIO AND PROPORTION									
1. Relate ratio and proportion to fractions									
Subsets of objects									
Numbers compared by the words "out of"									
XIV. PROBLEM SOLVING									
1. Solve written word problems involving special topics									
Map reading									
Estimation									
Averages									
Clock problems									
Weights									
Temperature									
General interest									
Science topics									

117 (10)

102 (6)

87, 99 (10)

103 (7)

59 (9)

27, 43, 54-55 (10)

41, 50, 53 (10)

10-11, 20 (6)

164-5 (10) / CT (2)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 4

UNIT PAGES	1 1-21	2 22-63	3 72-111	4 112-133	5 134-147	6 148-155	156-167
Geography topics	18-19 (10)						
Money		42 (2)					
2. Solve word problems embedded in short stories using arithmetic operations		26 (10) 11, 17 (10) / CT (2)	28-29 (10)				
Addition-subtraction			77, 97 (10) 28-29 (10) / CT (5)		143 (3) CT (1)		
Multiplication-division							
3. Solve word problems involving rational numbers in fraction notation							
XV. LOGIC							
1. Use informal logic in computation							
Reasoning in addition		33, 44 (10) 61 (6)			142 (10)		
Reasoning in subtraction							
Reasoning in multiplication-division							
XVI. NUMBER THEORY							
1. Recognize properties of special sets of whole numbers							
Odd and even numbers							
Factors and products							
Common factors							
Greatest common factor							
Prime numbers							
XVII. ESTIMATION							
1. Estimate results of mathematical operations							
Sums and differences							
							158-9, 162 (10) 44 (5) / CT (6)

4S MATH ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 4

GEOMETRY

GEOMETRY

UNIT
PAGES

1

2

UNIT 1
64-71

3

4

5

UNIT 2
148-155

6

Products

1-21

22-63

72-111

112-133

134-147

148-155

156-167

Quotients

160-1(10)
44-5(10)/
CT(4)
163(10)
45(10)/CT
(2)
157(8)
43(10)/CT
(3)
157(8)
43(10)/CT
(3)

Multiples of 10

164-5(10)/
CT(2)

Multiples of 100

116(10)
124-5(7)

Estimate measurements

112-114(10)
31-2(10)/
CT(1)
115(8)
32(3)/CT
(3)
115, 117(10)
32(3)/CT
(3)

Length

112-3(4)
31(4)

Perimeter

Estimate solutions to

word problems

General unit

Inch

Centimeter

Nearest inch or centimeter: (See XVII-2)

Determine the area of

plane surfaces by counting

General unit (concept)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 4

UNIT PAGES	1 1-21	2 22-63	GEOMETRY UNIT 1		GEOMETRY UNIT 2	
			64-71	72-111	112-133	134-147
Squares, rectangles and triangles (sq. units)					118-121 (10) 33, 35 (6) / CT (1) 118-9 (10) 33 (6) / CT (2) 121 (4) 33 (3) / CT (1)	156-167
Irregular shapes (sq. units)						
Rectangles (sq. centimeter)						
3. Use multiplication to determine area and volume Rectangles (sq. units) Rectangular solids (cubic units)						
4. Determine the volume of a solid by counting units General unit (concept)					112-3 (4) 31 (4) / CT (1) 122-3 (10) 34 (5) / CT (2) 122-3 (6) 34 (2) / CT (1)	
Rectangular solids (cubic units)						
Irregular solids (cubic units)						
5. Determine perimeter of polygons Estimating Using ruler						
Adding lengths of sides					126-7 (10) 35 (3) / CT (1) 126 (10) 35 (6) / CT (2)	
6. Recognize and compare units of measure Ounces, cups, pints, quarts, gallons					128 (10) 36 (10) / CT (2)	

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

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UNIT PAGES	1 1-21	2 22-63	GEOMETRY UNIT 1 64-71	3 72-111	4 112-133	5 134-147	GEOMETRY UNIT 2 148-155	6 156-167
Inches, feet, yards, miles					129-130 (10)/CT(2) 130-1(7)			
Seconds, minutes, hours, days, weeks					129(1) 129(1) 130-1(3)			
Square feet, square yards								
Cubic feet, cubic yards								
Ounces, pounds, ton								
7. Add and subtract units of measure, with renaming of the sum or difference								
XIX. GEOMETRY								
1. Construct simple closed curves and recognize properties			64-5 (10) 64-5 (10)					
Inside								
Outside								
2. Construct circles using a compass and identify com- ponents			68-9 (7) 64-71 (4) 70 (3) 70 (3)				148-9 (5) 150-1 (4) 150-1 (4) 152-3 (2) 154-5 (2)	
Radius								
Center								
Diameter								
Chord								
Tangent								
Central angle								
Inscribed angle								
Inscribed circle								
Circumscribed circle								
Circle through one point								
Circle through two points								
Circle through three points			66-7 (10) 69 (7) 71 (3)					
3. Construct paper models of solid figures and identify properties								
Cubes								
--Faces								
--Edges								
--Vertices								

ADDITION-WESLEY INSTRUCTIONAL OUTCOMES GRADE 4

UNIT PAGES	1 1-21	2 22-63	GEOMETRY UNIT 1		3 72-111	4 112-133	5 134-147	GEOMETRY UNIT 2	
			64-71	148-155				156-167	168-177
Triangular pyramids --Faces --Edges --Vertex Cylinders Cones									
4. Write number pair, co-ordinates in a Cartesian axis 5. Plot points defined by a number pair in a Cartesian axis 6. Complete a function pair and graph the points on a Cartesian axis Single quadrant Four quadrants (use of negative numbers)**									
XX. GRAPHS AND SCALE DRAWINGS Interpret information Maps Bar graphs and charts									
XXI. SPECIAL TOPICS 1. Define and utilize function rules to describe operations on whole numbers									
CHAPTER REVIEW CUMULATIVE REVIEW ("Keeping in Touch")									

** This lesson is for advanced students.

45 MATH
ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

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GEOMETRY
UNIT 4
244-25110
252-28911
290-319GEOMETRY
UNIT 3
192-1999
232-2438
200-2317
168-191

I. SET CONCEPTS

1. Recognize and relate concepts of set, number and numeral
2. Relate operations on whole numbers to set operations

Addition

Multiplication

Division

3. Relate sets and subsets to fractions

Fractions

Equivalent fractions

4. Relate regions and subregions to fractions

Fractions

Equivalent fractions

5. Perform set operations

Union

Product sets (cross products)

II. PLACE VALUE

1. Recognize the number of elements in sets grouped by

--Tens and ones

--Hundreds, tens and ones

--Thousands, hundreds, tens and ones

2. Compare the number of elements in sets grouped by thousands, hundreds and tens

252-7 (10)
76,78 (5) /
CT (1)258-9 (10)
79 (2)252-7 (10)
76,78 (7) /
CT (4)260-5 (10)
79-80 (7) /
CT (4)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

UNIT PAGES	7 168-191	GEOMETRY UNIT 3 192-199	8 200-231	9 232-243	GEOMETRY UNIT 4 244-251	10 252-289	11 290-319
3. Associate numerals for whole number and place value descriptors using words and expanded numerals Given numerals, identify place value --2-digit numerals --3-digit numerals --4-digit numerals --5-digit numerals --6-digit numerals Given place values, identify numerals --2-digit numerals --3-digit numerals --4-digit numerals --5-digit numerals --6 or higher digit numerals							
4. Recognize the meaning of the words decade, century, millennium							
III. OPERATIONS 1. Multiply and divide whole numbers 2. Add and subtract rational numbers 3. Recognize inverse operations	(See XI)						
Addition-subtraction Multiplication-division	(See XII-9)						
IV. SEQUENCES 1. Identify a rule in a number sequence by providing the missing elements to continue the sequence							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

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UNIT PAGES	7 168-191	GEOMETRY UNIT 3 192-199	8 200-231	9 232-243	GEOMETRY UNIT 4 244-251	10 252-289	11 290-319
V. INEQUALITIES							
1. Compare two whole numbers							
Identifying number "less than" or "greater than" a specified number							
Using symbols $<$, $>$, $=$							
Writing the number which is a specified value "less than" or "greater than"							
2. Compare two rational numbers							
by							
Using symbols $<$, $>$, $=$							
Agreeing or disagreeing with statements of inequality							
3. Compare two rational numbers in mixed numeral notation							
Using symbols $<$, $>$, $=$							
4. Recognize inequalities in estimation							
5. Use symbols $<$, $>$, $=$ in comparing addition and subtraction expressions							
	(See XVII-1)						
VI. NOTATION							
1. Relate two numerical quantities by the symbol $=$, or \neq							
	(See also V-1, 2, 3 and 5)						
VII. NUMBER FACTS							
1. Use multiplication facts for the digits 0 - 9 to complete a 10 by 10 multiplication table							
						270(10)	
							304(10) 92(10)/CT (3) 307(10) 91(10)/CT (4)
							312(10)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 4

UNIT	PAGES	GEOMETRY				UNIT 4	244-251	9	232-243	8	200-231	10	252-289	11	290-319
		7	168-191	UNIT 3	192-199										
VIII. EQUATIONS AND SOLUTIONS															
1. Determine solutions to arithmetic equations*															
Addition and subtraction															
Multiplication and division															
Equations with rational numbers															310, 314-5' (10)/CT(1)
IX. NUMBER LINE															
1. Illustrate order of rational numbers on the number line by indicating proper placement															292-7, 301, 304-7 (10) 88-90 (10)/CT(5) 311-2 (10), 93, 95 (10)/CT(4)
Fractions															
Mixed numerals															
2. Recognize operations represented on the number line															
Addition-subtraction of whole numbers															
Multiplication-division of whole numbers															
Addition-subtraction of rational numbers															308-9 (10) 94 (7)
3. Represent moves on the number line with special numerals															
X. BASIC PRINCIPLES															
1. Recognize and use basic principles for addition-subtraction															
Commutative principle (addition)															

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GRADE 4

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UNIT PAGES	7 168-191	GEOMETRY UNIT 3 192-199		8 200-231		9 232-243		GEOMETRY UNIT 4 244-251		10 252-289	11 290-319
2.	Associative principle and using parentheses Recognize and use basic principles for multiplication- division										
	Commutative principle										
	Associative principle and using parentheses Distributive principle										
	Zero in multiplication One in multiplication Zero in division One in division										
		168-170(10) <u>47(10)/CT(2)</u>									
XI.	PROCESSES (ALGORITHMS)										
1.	Add whole numbers Two single digit addends with multiple renaming 2-digit addends with mul- tiple renaming 3 or more digit addends with multiple renaming 3 or more addends										
2.	Subtract whole numbers 1-digit or 2-digit numeral with renaming 1-digit, 2-digit or 3-digit numeral from a 3-digit nu- meral with renaming Numerals with more than 3-digits										
3.	Relate multiplication to repeated addition										

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

UNIT PAGES	7 168-191	GEOMETRY UNIT 3 192-199	8 200-231	9 232-243	GEOMETRY UNIT 4 244-251	10 252-289	11 290-319
4. Multiply whole numbers 1-digit numeral by 1-digit numeral One or two 2-digit factors	170-1, 176, 178 (10) 48, 49, 51-2 <u>(10)/CT(8)</u> 172-3, 182, 184, 186 (10) 48-9, 52, 54- <u>56(10)/CT</u> (4)						
One or two 3-digit factors	172-3 (10) 49 (5) 171, 186 (10)/ CT(1)						
One or two 4 or more digit factors Three or more factors	176, 183 (10) <u>50 (10)/CT(2)</u> 176 (10) <u>50 (8)</u>						
By factors of 10, 100 ... By factors of 20, 30 ...							
5. Identify related products (3 x 4, 3 x 40, 3 x 400, etc.)							
6. Divide whole numbers Quotients by repeated sub- traction Quotients as missing fac- tors Special quotients (10, 20, .30 ...) Quotients by group sub- traction Using estimation to help find quotients			205, 209 (10) 58-9 (10) <u>200, 208, 214,</u> 220, 224 (10) 60, 64, 66, <u>67 (10)/CT</u> (6)				

UNIT PAGES		7 168-191	GEOMETRY UNIT 3 192-199	8 200-231 203, 210-1 (10) 61, 64-6, 68- 9 (10)/CT (5) 221 (10) 66 (8) 221-2, 225 (10) 68-9 (10) 204-16, 222, 225 (10) 60-1, 64-9 (10)/CT (7) 221-2, 225 (10) 68-9 (10)/ CT (4) 207-15, (10) 61, 64-5, 69 (10)/CT (7) 210-1 (10) 61, 65 (10)	9 232-243	GEOMETRY UNIT 4 244-251	10 252-289	11 290-319
Quotients with remainders								
By multiples of 10								
2-digit dividend by 1 or 2-digit divisor								
3 or more digit dividend by divisors to 3-digits								
2-digit divisors								
2 and 3-digit quotients								
Quotients and checking								
7. Apply function machine algorithm to describe operations with whole numbers					235, 240 (10)			
8. Use an intuitive algorithm for finding the arithmetic average for a set of numbers				212-3 (10)				
XII. RATIONAL NUMBERS								
1. Relate sets and regions to fractions		(See I-3, 4)						

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

UNIT PAGES	7 168-191	GEOMETRY UNIT-9 192-199	8 200-231	9 232-243	GEOMETRY UNIT 4 244-251	10 252-289	11 290-319
11. Use fractions to compare quantities or measures						83-4 (10) / CT (1)	
12. Identify fraction with lowest terms within a set of equivalent fractions						86 (10) / CT (3)	246,300 (10) / CT (10)
XIII. RATIO AND PROPORTION							
1. Relate ratio and proportion to fractions							
Subsets of objects							
Numbers compared by the words "out of"						252-4 (10)	
						254-5 (10)	
XIV. PROBLEM SOLVING							
1. Solve written word problems involving special topics							
Map reading							
Estimation							
Averages							
			213 (4)				
			62 (10) / CT (2)				
			229 (10)			271 (9)	
Clock problems						287 (10)	
Weights							
Temperature			217 (5)				
General interest			223 (7)				
Science topics	181 (5)		217, 231 (10)				
	187 (8)		219 (4)				
Geography topics	175, 185, 189 (10)					289 (6)	303, 317 (10)
Money							
2. Solve word problems embedded in short stories using arithmetic operations							
Addition-subtraction	180 (8)						
Multiplication-division	180 (4)		201, 226 (10)				
	53 (10) / CT (1)		63, 70 (10) / CT (2)				

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

	UNIT 7		GEOMETRY UNIT 3		GEOMETRY UNIT 4		GEOMETRY UNIT 9		GEOMETRY UNIT 10		GEOMETRY UNIT 11	
	PAGES	168-191	192-199	200-231	232-243	244-251	252-289	290-319	320-349	350-379	380-409	410-439
2. Identify the terms numerator and denominator.												
3. Identify sets of equivalent fractions By using subsets and subregions By multiplying numerator and denominator by the same number		(See I-3, 4)										
4. Test for equivalence of two fractions by cross multiplying												
5. Relate rational numbers by rewriting --Improper fractions to mixed numeral notation --Mixed numeral notation to improper fractions												
6. Compare fractions and mixed numerals using symbols or by indicating agreement or disagreement with inequality statements												
7. Illustrate order of fractions and mixed numerals on the number line		(See V-2, 3)										
8. Recognize the representation of addition and subtraction of fractions on the number line		(See IX-1)										
9. Add and subtract rational numbers in fractional form		(See IX-2)										
10. Use rational numbers in fraction and mixed numeral form to express linear measure												

268-9 (10)
82 (0)266-7 (10)
81 (10)/
CT (4)276-7 (10)
85 (8)/CT
(2)298-9 (10)
CT (1)310-1 (10)
93 (9)
310-1 (10)
93, 95 (10)308 (10)/
CT (2)313 (4)/
CT (1)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 4

UNIT PAGES	7 168-191	8 200-231	9 232-243	10 252-289	11 290-319
	GEOMETRY UNIT 3 192-199	GEOMETRY UNIT 4 244-251	GEOMETRY UNIT 4 244-251	GEOMETRY UNIT 4 244-251	GEOMETRY UNIT 4 244-251
3. Solve word problems involving rational numbers in fraction notation				279,289 (10) <u>77(7)</u>	315(5)
XV. LOGIC					
1. Use informal logic in computation					
Reasoning in addition					
Reasoning in subtraction					
Reasoning in multiplication-division					
XVI. NUMBER THEORY					
1. Recognize properties of special sets of whole numbers					
Odd and even numbers					
Factors and products					
Common factors					
Greatest common factor					
Prime numbers					
XVII. ESTIMATION					
1. Estimate results of mathematical operations					
Sums and differences					
Products					
Quotients					

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 4

UNIT PAGES	7 168-191	GEOMETRY UNIT 3 192-199	8 200-231	9 232-243	GEOMETRY UNIT 4 244-251	10 252-289	11 290-319
5. Determine perimeter of polygons	(See XVII-2)						
Estimating Using ruler							
Adding lengths of sides							
6. Recognize and compare units of measure							
Ounces, cups, pints, quarts, gallons							
Inches, feet, yards, miles							
Seconds, minutes, hours, days, weeks							
Square feet, square yards							
Cubic feet, cubic yards							
Ounces, pounds, ton							
7. Add and subtract units of measure, with renaming of the sum or difference	$56(8)/CT(1')$						
GEOMETRY							
Construct simple closed curves and recognize properties							
Inside							
Outside							
2. Construct circles using a compass, and identify components							
Radius							
Center							
Diameter							
Chord							
Tangent							
Central angle							
Inscribed angle							
Inscribed circle							
Circumscribed circle							
Circle through one point							
Circle through two points							
Circle through three points							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 4

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UNIT	PAGES	7 168-191	GEOMETRY				11	
			UNIT 3 192-199	8 200-231	9 232-243	UNIT 4 244-251	10 252-289	290-319
3. Construct paper models of solid figures and identify properties Cubes --Faces --Edges --Vertices Triangular pyramids --Faces --Edges --Vertex Cylinders Cones			192-5 (10) 192-5 (2) 192-5 (5) 192-5 (2) 196-7 (1) 196-7 (2) 196-7 (4) 196-7 (2) 198 (1) 199 (1)					
						246-7 (10)		
						246-7 (10)		
						248-9 (10) 250-1 (10)		
							289 (6) 290 (6) 317 (10)	
4. Write number pair coordinates in a Cartesian axis 5. Plot points defined by a number pair in a Cartesian axis 6. Complete a function pair and graph the points on a Cartesian axis Single quadrant Four quadrants (use of negative numbers)**								
XX. GRAPHS AND SCALE DRAWINGS 1. Interpret information from Maps Bar graphs and charts				230 (7)				
XXI. SPECIAL TOPICS 1. Define and utilize function rules to describe operations on whole numbers					235-40 (5)			

** This lesson is for advanced students.

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 4

UNIT PAGES	GEOMETRY UNIT 3 192-199		GEOMETRY UNIT 4 244-251		GEOMETRY UNIT 5 252-289		GEOMETRY UNIT 6 290-319	
	7 168-191	8 200-231	9 232-243	10 252-289	11 290-319	12 320-351	13 352-383	14 384-415
CHAPTER REVIEW	190 (10) 57 (10)	230 (10) 71 (10)	243 (10) 75 (10)	288 (10) 87 (10)	318-9 (10) 96 (10)			
CUMULATIVE REVIEW ("Keeping in Touch")	188 (10)	218, 228 (10)	242 (10)	270, 286 (10)	302, 316 (10)			

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

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UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
I. SET CONCEPTS								
1. Recognize set of points and numbers								
Sets of points					77 (1) 27 (1) CT (1)			
Sets of number pairs								
Sets of equivalent fractions		38-9 (10) 7-8 (10) / CT (5)						188-93 (10) 64-8 (10) / CT (6)
Sets of solutions			49-51, 65 (10)					
2. Identify operations on sets								
Union								
Intersection							167 (10) 57 (10) / CT (1) 167 (10) 57 (10) / CT (1)	
3. Relate sets and regions to rational numbers								176-89 (10) 61-7 (10) / CT (6)
"And", "Or" and "not" statements (reasoning)								
II. PLACE VALUE								
1. Read and write numerals								
Thousands	5 (10) 1-2 (10) / CT (2)							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
Millions	6-7 (10) / 1-2 (10) / CT(1)							
Billions to Quintillions	7 (5) 3 (1) / CT(3)							
2. Identify place values of digits in numerals	5-6, 10 (10) 2-3 (10) / CT(5)							
Whole numbers								
3. Decimal numbers								
3. Recognize numerals in different bases								
Base-10 numerals	10 (4) 5 (7) / CT(2)							
Base-4 numerals	10-1 (10) 5 (10) / CT(4)							
4. Represent numerals in expanded form	6 (10) 3 (10) / CT(2)							
5. Write numerals using different notations								
Exponential notation								
Decimal notation			65 (0)					
6. Represent numbers by concrete models								
Abacus	1-3 (10) 1 (2) / CT(1)							
Base ten machine	4 (5) 2 (4)							
III. OPERATIONS								
1. Add-subtract with rational numbers	(See XI-2)							
2. Multiply-divide with rational numbers	(See XI-2)							
3. Perform operations on base-4 numerals	(See XI-4)							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

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UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
IV. SEQUENCES								
1. Recognize and complete sequences involving whole numbers on a set of number lines		34-7(10)/ CT(1)						
Rational numbers								
--Rational numbers on a number line								
Odd and even numbers			59(10)					
V. INEQUALITIES								
1. Recognize and use rational symbols $<$, $>$, $=$, \neq	8-9(10) 4(10)/ CT(6)					121-1,124 (10)47-8, 50-1(10)/ CT(2)		
2. Solve number phrases or sentences involving Whole numbers								
Rational numbers								
Graphing								
Solution sets	(See XII-3)					132(10)		
VI. NOTATION								
1. Recognize symbols related to								
Ancient numerals								
--East Arabic numerals	15(4)							
--Egyptian numerals	15(3)							
--Greek numerals	15(3)							
--Roman numerals	14(10)/ CT(2)							
Hindu-Arabic numerals								
--Whole numbers	40(10) 9(10)/ CT(10)							
--Rational numbers								
--Fractions								
--Decimals								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
Functions								
--f(n)	19(10) <u>7(10)/</u> CT(3)				81(0)		166(10) <u>55(10)/</u> CT(1) 166(10) <u>55(10)/</u> CT(1)	
Sets								
--n								
--U								
Geometry								
--o (degree)					89(7) <u>36(2)/</u> CT(2) 80,86(2) <u>28,30(7)</u> 78(10) 27(6)/ CT(2) 84-5(10)/ CT(1)		166(0)	
--								
--								
--								
Variables								
--a,b,c--	20,25(10) 8(10)/ CT(10)					122(10)		
Inequalities								
<, >, =, ≠	(See V-1)							
VII. NUMBER FACTS								
1. Recognize related terms								
Addend								
--Missing addend	27(10) <u>10(10)</u> 20(0) 27(10) <u>10(10)</u>							
Sum								
Difference								

UNIT
PAGES

1-11

2

3

4

5

6

7

8

176-205

Factor	18-45	46-65	66-75	76-101	102-159	160-175	176-205
--Missing factor	23(9) 31(10) 12(10) 23,31(10)	54(10) 18-20(10)/ CT(2)					
Product	29,31(10) 12-3(10) 29(0)						
Quotient							
Divisor							
Recall basic operation							
Addition	18-21(10) 8-9(10)/ CT(6) 22(10) 8(3)/ CT(1) 26-7(10) 10(10)/ CT(1) 28(10) 11(10) 23-5(10) 8-9(10)/ CT(7)	58-9(10)/ CT(2)					
--Repeated addition							
Subtraction							
--Repeated subtraction							
Multiplication							
--Multiples of 10, 100, and 1000		50-1(10) 18(10)/ CT(3) 52-3(10) 19(10)/ CT(7) 54-5(10) 20(10)/ CT(7)					
--Special products							
--Products							

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
Division		29-33(10) 11-2(10)/ CT(3) 32(10) 13(6)/ CT(1)	56-7(10) 21(10)/ CT(2)					
--Zero in division								
--Special quotients								
VIII. EQUATIONS AND SOLUTIONS								
1. Determine solutions to equations								
Multiplication and addition of whole numbers		24(10) 8-9(10)/ CT(1)	52-3(10) 20(10)/ CT(7) 56-7(10) 21(10)/ CT(2)					
Multiplication of whole numbers (special products) (See VII-2)								
Multiplication and division of whole numbers (special quotients) (See VII-2)								
Addition of rational numbers (See XI-2)								
a,b,c---variables (See VI-1)								
2. Find a set of solutions to several related equations			49-57(10)					
IX. NUMBER LINE								
1. Use the number line to represent numbers		34-7(10)/ CT(1)						
Whole numbers								
Rational numbers								
2. Use the number line to represent operations								
Estimation of whole numbers			66-7(10)					

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 5

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UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
Addition-subtraction of rational numbers Multiplication of rational numbers Graphing								
X. BASIC PRINCIPLES 1. Recognize basic principles of mathematical operations								
Associative principle --Addition of whole numbers			46, 48 (10) <u>16-7 (5) /</u> CT(1)					
--Addition of rational numbers								
--Addition of modular numbers								
--Multiplication of whole numbers			46, 48 (2) <u>16-7 (5) /</u>					
--Multiplication of rational numbers								
--Multiplication of modular numbers								
Commutative principle --Addition of whole numbers			46, 48 (5) <u>16-7 (5) /</u> CT(1)					
--Addition of rational numbers								
--Addition of modular numbers								
--Multiplication of whole numbers			46, 48 (2) <u>16-7 (5) /</u>					
--Multiplication of rational numbers								
--Multiplication of modular numbers								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

UNIT PAGE	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
Distributive Principle								
--Multiplication of whole numbers			$\frac{46-8(10)}{16-7(10)/}$ CT(2)					
--Multiplication of modular numbers			$\frac{46-48(2)}{16-7(3)}$					
One principle								
--Multiplication of whole numbers								
--Multiplication of rational numbers								
--Multiplication of modular numbers								
Zero principle								
--Addition of whole numbers			$\frac{46-48(1)}{16-7(3)}$					
--Addition of rational numbers								
--Addition of modular numbers								
XI. PROCESSES (ALGORITHMS)								
1. Use algorithms for operations on whole numbers								
Addition-subtraction								
--1, 2, 3, 4-digit numbers								
--By regrouping								
--More than two addends								
--Involving money								
						$\frac{102-9(10)}{37-8(10)/}$ CT(4) $\frac{107(10)}{38(10)/}$ CT(2) $\frac{102-4(10)}{37(10)/}$ CT(2) $\frac{104(10)}{39(10)/}$ CT(2)		

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 5

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UNIT	1	2	3	4	5	6	7	8
PAGES	1-17	18-45	46-65	66-75	76-101	102-159	160-175	176-205
Multiplication								
--2, 3, 4-digit by 1-digit factors						112-3(10)		
--3, 4-digit by 2-digit factors						41-2(10)		
--3, 4-digit by 3-digit factors						113-4(10)		
--Involving money						42(8)/		
						CT(2)		
						116(10)		
Division						154(10)/		
--1-digit divisors and 2-3-digit quotients						CT(1)		
--Short form						125(10)		
--2-digit multiple of ten and 1-digit quotients						43-4(10)/		
						CT(1)		
--2-digit divisors and 1-digit quotients						128-9(10)		
--2-digit multiple of ten and 2-digit quotients						46(10)		
--2-digit divisors and 2-digit quotients						133(10)		
						47(8)		
--Short form						135-6(10)		
--2-digit divisors and 3-digit quotients						48-9(10)		
						143(10)		
--Zero in the quotient						50(10)/		
--Involving money						CT(1)		
						145-7(10)		
						51(10)/		
						CT(1)		
						150-1(10)		
						52(10)		
						152-3(10)		
						53(7)/		
						CT(1)		
						153(10)		
						154-5(10)/		
						CT(1)		
2. Use algorithms for operations on rational numbers								

(See XII-4)

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UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
3. Use algorithms for operations on modular numbers 12-clock 4-clock	(See XXI-3)							
XII. RATIONAL NUMBERS								
1. Recognize related terms Fractions --Numerator --Denominator Decimals --Decimal notation Write numerals for rational numbers --Equivalent fractions								180-1 (10) / CT (1) 180-1 (1) / CT (1)
2. --Lower, higher and lowest terms --Checking --Improper fractions --Mixed numerals --Ratio Decimals Relate rational numbers to sets and regions Use rational numbers in Measurement Inequalities Graphing								186-91 (10) 64-8 (10) / CT (6) 196-200 (10) 69 (10) / CT (6) 192-3 (10) 68 (10) / CT (1) 63 (10)
3. Relate rational numbers to sets and regions	(See XII-1)							
4. Use rational numbers in Measurement Inequalities Graphing	(See I-3)							

UNIT	1	2	3	4	5	6	7	8
PAGES	1-17	18-45	46-65	66-75	76-101	102-159	160-175	176-205
5. Perform operations on rational numbers in fraction form								
Addition-subtraction								
--Fractions less than 1, similar denominators								
--Fractions less than 1, different denominators								
--Using least common denominator algorithm								
--Fractions more than 1								
Multiplication								
--Fractions less than 1								
--Fractions less than 1 by whole numbers								
Division								
--Fractions less than 1								
--Related to multiplication								
Add-subtract rational numbers in decimal form								
--1, 2-place decimals less than 1								
--1, 2-place decimals more than 1								
--Involving money								
--Involving metric units								
XIII. RATIO AND PROPORTION								
1. Use ratio to compare the measure of two objects								
2. Calculate the distance between two cities on a map drawn to scale								
3. Draw an object to a specified scale								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 5

UNIT PAGES	1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
XIV. PROBLEM SOLVING								
1. Solve word problems involving Time, weight, distance, etc.								
Averages								
Operations on numbers			62 (10)				173 (10)	
Measurement						137, 139 (10) 40, 44 (8) / CT (1)		
Geography and population						126-7 (10) 45 (10) / CT (1)		
Planets						110-1 (10) 131 (5)		
Airplanes and travel						148-9 (10) 40, 44 (3) 157 (6)		
The Pentagon						118, 130 (10) 40, 49 (10) / CT (2)		201 (10)
Temperature								
Short stories		42 (10) 14 (10) / CT (1)		70-3 (10) 25 (10) / CT (5)				
Decimal numbers								
Estimation								
2. Write a problem about a given picture								203 (5)
XV. LOGIC								
1. Find a set of solutions implied from related equations			49-57 (10)					
2. Make mathematical statements involving Deduction, "and" "or" Negation, "not"			60-1 (10) 60-1 (8) / CT (1)					

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

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UNIT
PAGES1
1-172
18-453
46-654
66-755
76-1016
102-1597
160-1753. Solve reasoning problems
involving

Operations

Sets

Weights

XVI. NUMBER THEORY

1. Recognize special sets
of numbers

Odd and even numbers

Factors

--Common factors

--Greatest common factor

--Factor trees

Prime numbers

Multiples

--Least common multiple

--Least common denomi-
nator

Equivalent fractions

--Lowest terms

Modular numbers

--12-clock

--4-clock

58 (10)

60-1 (10)

62 (10)

59 (10)

160-1 (10)

55 (10) /

CT (4)

168-9 (10)

58 (5) /

CT (1)

168-9 (10)

58 (9) /

-CT (2)

162-5 (10)

55-6 (9) /

CT (3)

164-5 (10)

56 (10) /

CT (5)

170 (10)

59 (10) /

CT (1)

171 (10)

59 (7) /

CT (2)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

UNIT	1	2	3	4	5	6	7	8
PAGES	1-17	18-45	46-65	66-75	76-101	102-159	160-175	176-205
XVII. ESTIMATION								
1. Use estimation to perform Mathematical operations on whole numbers								
--Quotients and products				69 (10) <u>24 (10) /</u> CT (3)		122, 124, 134, 142 (10)		
--Multiples of 10, 100				67-8 (10) <u>23 (10) /</u> CT (5)				
--Sums and differences				70-3 (10) <u>24 (10) /</u> CT (7)				
Mathematical operations on rational numbers				69 (10)	82-3 (10)			182-3 (0)
Measurement								
XVIII. MEASUREMENT								
1. Recognize and use units of measurement								
Metric units								
--Centimeter					82-3 (3) <u>29 (3) /</u> CT (1)			
Inch					82-3 (10)			
Foot					29 (2)			
Degree					83 (8) <u>29 (1) /</u> 89 (6)			
Radian					<u>36 (2) /</u> CT (2)			
2. Use measuring instruments					89 (1)			
Ruler								
Protractor					90-1 (10) <u>31, 36 (10) /</u> CT (1)			
Compass					92-4 (7) <u>32-3, 36 (10) /</u> CT (1)			

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 5

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UNIT	1	2	3	4	5	6	7	8
PAGES	1-17	18-45	46-65	66-75	76-101	102-159	160-175	176-205
3. Determine lengths Perimeter of polygons --Unit count					96-7 (5) 34 (6) / CT (1)	117 (6) 137-9 (10)		
--Formula Distance --Formula Line segments					82 (4) 29 (10) / CT (1)			
4. Determine area Parallelograms --Unit count --Formula Rectangles --Unit count --Formula					99 (1) 35 (1) / CT (1) 98 (4) 35 (1) 98 (4) 35 (4) / CT (1)	117 (2)		
5. Surface areas of space figures --Unit count --Formula Triangles --Unit count --Formula Determine volume Rectangular prisms --Unit count --Formula						117 (2)		
6. Determine size of angles --Unit count (protractor)					88-91 (10) 31 (8) / CT (1)			

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UNIT	1	2	3	4	5	6	7	8
PAGES	1-17	18-45	46-65	66-75	76-101	102-159	160-175	176-205
XIX. GEOMETRY								
1. Recognize basic concepts								
Points					76-7 (1) 27 (1) / CT (1)			
--Sets of points					77-8, 84 (10) 27 (1) / CT (1)			
Rays					78 (3) 27 (1) 94-5 (7) / CT (1)			
Lines					94-5 (2) / CT (1)			
--Parallel					78-80 (10) 27 (1) / CT (1)			
--Perpendicular					80-1 (10) 28 (5) / CT (2)			
Segments					93 (2) 84-5 (10) 30 (10) / CT (2)			
--Congruent					86-7 (5) 30 (7) / CT (1)			
--Bisecting Angles					77 (2) / CT (1)			
--Congruent/incongruent								
Plane								
2. Identify geometric shapes								
Triangles								
--Congruent								
Square					95 (4) / CT (1)			
Rectangle					95 (4) 35 (1) / CT (1)			

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UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
Rhombus					95(2)/ CT(1)			
Trapezoid					92(3)			
Circles					95(4)/			
Parallelogram					CT(1)			
Polygons					96-7(10)/	117(6)		
--Perimeter					CT(1)			
Quadrilaterals					96-7(10)/	117(6)		
					CT(1)			
					95(10)/			
					CT(1)			
3. Identify space figures								
Prisms								
--Rectangular								
--Square								
--Triangular								
Pyramid								
--Hexagonal								
--Rectangular								
Spheres								
--Hemisphere								
Cylinder								
Cube								
Cone								
--Truncated								
Torus								
4. Construct or copy geo- metric figures								
Line segments					92(1)			
					27(1)			
					93(1)			
--Bisector					92(1)			
Angle					32(1)			
					93(1)			
--Bisector					32(2)			

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GRADE 5

UNIT	1	2	3	4	5	6	7	8
PAGES	1-17	18-45	46-65	66-75	76-101	102-159	160-175	176-205
Circles					92 (1)			
Lines					94 (2)			
--Parallel					27 (1)			
--Perpendicular					94 (1)			
Triangles					33 (2)			
Cube					94 (1)			
Cylinder					33 (6)			
Prism								
Pyramid								
Sphere								
Cone								
XX. GRAPHS AND SCALE DRAWINGS								
1. Identify different kinds of graphs						110, 119, 159 (1) 110, 119, 159 (0)		
Bar graphs								
Circle graphs								
Line graphs								
2. Interpret data categorized on charts						111 (5)		
3. Graph sets of numbers on a number line								
Whole numbers								
Rational numbers								
4. Identify the components of a graph on a number plane								
Axes								
Coordinates								
5. Graph sets of numbers on a number plane								
Number pairs								
Function rules								
Integers								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 5

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UNIT	1	2	3	4	5	6	7	8
PAGES	1-17	18-45	46-65	66-75	76-101	102-159	160-175	176-205
6. Calculate the distance of two points on a map drawn to scale								
7. Draw an object to a given scale								
XXI. SPECIAL TOPICS								
1. Recognize concepts related to functions								
Function rules								
Number pairs		18-21 (10) 7-8, 11 (10) /CT(3)						
--Addition		38-9 (10) 7-8 (10) / CT(3)						176-7 (10) 61-2 (10) / CT(6)
--Repeated		20-1 (10) 7 (10) / CT(2)						
--Subtraction		22 (10) 8 (6) / CT(1)						
--Repeated		26-7 (10) 10-1 (10) 28 (10)						
--Multiplication		23-5 (10) 8 (10) / CT(2)						
--Division		29-30 (10) / CT(1)						
2. Recognize modular numbers								
3. Use algorithms on modular numbers								
For Addition								
--12-clock								
--4-clock								
For Subtraction								
--12-clock								
--4-clock								

MS MATH
ADDISON-WESLEY
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GRADE 5

UNIT PAGES	1 1-17	2 18-45	3 46-65	4 66-75	5 76-101	6 102-159	7 160-175	8 176-205
For Multiplication --12-clock ---4-clock								
CHAPTER REVIEWS	16-7 (10) <u>6 (10)</u>	44-5 (10) <u>15 (10)</u>	64-5 (10) <u>22 (10)</u>	75 (10) <u>26 (10)</u>	101 (10) <u>36 (10)</u>	158-9 (10) <u>54 (10)</u>	174-5 (10) <u>60 (10)</u>	204-5 (10) <u>70 (10)</u>
CUMULATIVE REVIEWS ("Keeping in Touch")		42 (10)	63 (10)	75 (10)	100 (10)	156 (10)	172-3 (10)	202-3 (10)

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
I. SET CONCEPTS							
1. Recognize set of points and numbers							
Sets of points							
Sets of number pairs							
Sets of equivalent fractions							
Sets of solutions							
2. Identify operations on sets							
Union							
Intersection							
3. Relate sets and regions to rational numbers							
"And", "or" and "not" statements (reasoning)							
II. PLACE VALUE							
1. Read and write numerals							
Thousands							
Millions							
Billions to Quintillions							
2. Identify place values of digits in numerals							
Whole numbers							
Decimal numbers							
3. Recognize numerals in different bases							
Base-10 numerals							
Base-4 numerals							
4. Represent numerals in expanded form							

306-12(10)
105-7(10)/
CT(10)290-1(10)
99(10)/CT(1)257(10)
87(2)/CT(0)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 5

UNIT PAGES	9	10	11	12	13	14	15
	206-225	226-255	256-271	272-289	290-303	304-313	314-323
5. Write numerals using different notations Exponential notation Decimal notation			256-60(10) 87(10)/CT (10)				
6. Represent numbers by concrete models Abacus Base ten machine							
III. OPERATIONS							
1. Add-subtract with rational numbers (See XI-2)							
2. Multiply-divide with rational numbers (See XI-2)							
3. Perform operations on base-4 numerals (See XI-4)							
IV. SEQUENCES							
1. Recognize and complete sequences involving whole numbers on a set of number lines Rational numbers	211(10) / 208-9(10) 71-2(10)/CT (8)	238(0) 77(8)					
--Rational numbers on a number line							
Odd and even numbers							
V. INEQUALITIES							
1. Recognize and use rational symbols $<$, $>$, $=$, \neq							
2. Solve number phrases or sentences involving Whole numbers Rational numbers Graphing Solution sets						304-5(10)	

UNIT/ PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
VI. 1. NOTATION Recognize symbols related to Ancient numerals --East Arabic numerals --Egyptian numerals --Greek numerals --Roman numerals Hindu-Arabic numerals --Whole numbers --Rational numbers --Fractions --Decimals	206-9 (10) $\frac{71-4 (10)}{CT(10)}$		256-7 (10) $\frac{87 (10)}{CT(10)}$	272 (6) $\frac{91 (10)}{CT(3)}$			
Functions --f(n) Sets -- \cap -- \cup Geometry -- $^{\circ}$ (degree) -- \approx -- \longleftrightarrow Variables --a,b,c-- Inequalities $<, >, =, \neq$	(See V-1)						
VII. 1. NUMBER FACTS Recognize related terms Addend --Missing addend							

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
Sum							
Difference							
Factor							
--Missing factor							
Product							
Quotient							
Divisor							
2. Recall basic operation facts							
Addition							
--Repeated addition							
Subtraction							
--Repeated subtraction							
Multiplication							
--Multiples of 10, 100, and 1000							
--Special products							
--Products							
Division							
--Zero in division							
--Special quotients							
VIII. EQUATIONS AND SOLUTIONS							
1. Determine solutions to equations							
Multiplication and addition of whole numbers							
Multiplication of whole numbers (special products)	(See VII-2)						
Multiplication and division of whole numbers (special quotients)	(See VII-2)						
Addition of rational numbers	(See XI-2)						
		248(10) 77-84(10)/ CT(10)					
a,b,c--variables	(See VI-1)						
2. Find a set of solutions to several related equations							

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
IX. NUMBER LINE							
1. Use the number line to represent numbers							
Whole numbers							
Rational numbers	206-9, 213-5 (10) <u>71-2(10)/</u> CT(9)	242-3 (10) <u>77(2)/CT(1)</u>					
2. Use the number line to represent operations							
Estimation of whole numbers							
Addition-subtraction of rational numbers		226, 230 (10) <u>77(2)/CT(1)</u>			292-3 (10) <u>100(3)/</u> CT(1)	304-5, 310 (10) <u>105-7(10)/</u> CT(10)	
Multiplication of rational numbers							
Graphing							
X. BASIC PRINCIPLES							
1. Recognize basic principles of mathematical operations							
Associative principle							
--Addition of whole numbers							
--Addition of rational numbers		246 (6)					<u>320(3)</u> <u>110(1)</u>
--Addition of modular numbers							
--Multiplication of whole numbers							
--Multiplication of rational numbers					294 (0) /CT (1)		320 (1)
--Multiplication of modular numbers							

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GRADE 5

UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
Commutative principle							
--Addition of whole numbers		246 (8)					
--Addition of rational numbers							
--Addition of modular numbers							
--Multiplication of whole numbers							
--Multiplication of rational numbers					294 (0) <u>101 (6) /</u> CT(1)		320 (2) <u>110 (1) /</u> CT(1)
--Multiplication of modular numbers							320 (2)
Distributive principle							
--Multiplication of whole numbers							320 (3)
--Multiplication of modular numbers							320 (2)
One principle							
--Multiplication of whole numbers							
--Multiplication of rational numbers					294 (0) <u>101 (10) /</u>		320 (1)
--Multiplication of modular numbers							
Zero principle							
--Addition of whole numbers							
--Addition of rational numbers		246 (10) <u>77 (1) /</u>					
--Addition of modular numbers							
XI. PROCESSES (ALGORITHMS)							
1. Use algorithms for operations on whole numbers							
Addition-subtraction							
--1, 2, 3, 4-digit numbers							
--By regrouping							

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UNIT	9	10	11	12	13	14	15
PAGES	206-225	226-255	256-271	272-289	290-303	304-313	314-323
--More than two addends							
--Involving money							
Multiplication							
--2, 3, 4-digit by 1-digit factors							
--3, 4-digit by 2-digit factors							
--3, 4-digit by 3-digit factors							
--Involving money							
Division							
--1-digit divisors and 2-3-digit quotients							
--Short form							
--2-digit multiple of ten and 1-digit quotients							
--2-digit divisors and 1-digit quotients							
--2-digit multiple of ten and 2-digit quotients							
--2-digit divisors and 2-digit quotients							
--Short form							
--2-digit divisors and 3-digit quotients							
--Zero in the quotient							
--Involving money							
2. Use algorithms for operations on rational numbers							
3. Use algorithms for operations on modular numbers							
12-clock							
4-clock							
XII. RATIONAL NUMBERS							
1. Recognize related terms							
Fractions							
--Numerator							
--Denominator							

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GRADE 5

UNIT, PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
Decimals							
--Decimal notation							
2. Write numerals for rational numbers							
Fractions							
--Equivalent fractions							
--Lower, higher and lowest terms							
--Checking							
--Improper fractions							
--Mixed numerals							
--Ratio							
Decimals							
3. Relate rational numbers to sets and regions							
4. Use rational numbers in Measurement Inequalities							
Graphing							
5. Perform operations on rational numbers in fraction form							
Addition-subtraction							

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
--Fractions less than 1, similar denominators		226-7(10) 77(10)/ CT(2)					
--Fractions less than 1, different denominators		228-35(10) 78-9(10)/ CT(5)					
--Using least common de- nominator algorithm		238-40(10) 80-1(10)/ CT(3)					
--Fractions more than 1		247-50(10) 83-4(10)/ CT(5)					
Multiplication							
--Fractions less than 1					291-7(10) 99,102(8)/ CT(5)		
--Fractions less than 1 by whole numbers					292-3,295 (10) 100-2(10)/ CT(4)		
Division							
--Fractions less than 1					298(10) 103(10)/ CT(4)		
--Related to multiplication					298(10) 103(10)/ CT(2)		
6. Add-subtract rational numbers in decimal form							
--1, 2-place decimals less than 1			261(10) 88(7)/CT(1)				
--1, 2-place decimals more than 1			262-3(10) 88(10)/ CT(4)				
--Involving money			264(10) 89(10)/ CT(1)				
--Involving metric units			266-7(10)				

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UNIT PAGES		9	10	11	12	13	14	15
XIII. RATIO AND PROPORTION		206-225	226-255	256-271	272-289	290-303	304-313	314-323
1. Use ratio to compare the measure of two objects	218-9(10)							
	219(8)							
2. Calculate the distance between two cities on a map drawn to scale								
3. Draw an object to a specified scale	219(1)							
XIV. PROBLEM SOLVING								
1. Solve word problems involving Time, weight, distance, etc.								
Averages								
Operations on numbers								
Measurement								
Geography and population								
Planets								
Airplanes and travel								
The Pentagon								
Temperature								
Short stories	216(10) <u>75(10)</u>		253(10)					
			237(10) 85(1) <u>241,251</u> (10) <u>85(10)/</u> CT(2)			300(10) 100,103 <u>(10)/CT(2)</u>		
Decimal numbers				265(10) <u>89(7)/CT(2)</u>				
Estimation								
2. Write a problem about a given picture								
XV. LOGIC								
1. Find a set of solutions implied from related equations								

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
2. Make mathematical statements involving Deduction, "and" "or" Negation, "not"							
3. Solve reasoning problems involving Operations Sets Weights							
XVI. NUMBER THEORY 1. Recognize special sets of numbers Odd and even numbers Factors --Common factors --Greatest common factor --Factor trees Prime numbers Multiples --Least common multiple --Least common denominator Equivalent fractions --Lowest terms Modular numbers --12-clock --4-clock		239 (4) 80 (2) 238-9 (10) 80 (2)					
XVII. ESTIMATION 1. Use estimation to perform Mathematical operations on whole numbers --Quotients and products --Multiples of 10, 100 --Sums and differences							

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
Mathematical operations on rational numbers Measurement							
XVIII. MEASUREMENT							
1. Recognize and use units of measurement			266-7 (10) 266-7 (10)				
Metric units							
--Centimeter							
Inch							
Foot							
Degree							
Radian							
2. Use measuring instruments							
Ruler	220-1 (10)						
Protractor							
Compass							
3. Determine lengths	220-1 (10) 82-3						
Perimeter of polygons							
--Unit count							
--Formula							
Distance							
--Formula							
Line segments							
Determine area							
Parallelograms							
--Unit count							
--Formula							
Rectangles							
--Unit count							
--Formula							
Surface areas of space figures							
--Unit count							
				284-5 (10) 97 (10) / CT (2)			

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UNIT	9	10	11	12	13	14	15
PAGES	206-225	226-255	256-271	272-289	290-303	304-313	314-323
--Formula				286-7(10)/ CT(1)			
Triangles				276-7(10) 93(8)/ CT(3)			
--Unit count				276-7(10) 93(6)/ CT(1)			
--Formula							
Determine volume				282(6) 96-7(10)/ CT(3)			
Rectangular prisms				282-3(8) 96(2)/ CT(3)			
--Unit count							
--Formula							
Determine size of angles							
--Unit count (protractor)						306-12(10)	
GEOMETRY							
Recognize basic concepts							
Points							
--Sets of points							
Rays							
Lines							
--Parallel							
--Perpendicular							
Segments							
--Congruent							
--Bisecting							
Angles							
--Congruent/incongruent							
Plane							
Identify geometric shapes							
Triangles				278(0) 276(10) 91(10)/ CT(2)			

XIX.

1.

2.

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
--Congruent				272(10) 91(10)/ CT(2)			
Square							
Rectangle							
Rhombus							
Trapezoid							
Circles							
Parallelogram							
Polygons							
--Perimeter							
Quadrilaterals							
Identify space figures							
Prisms							
--Rectangular							
--Square				278(1)/ CT(1)			
--Triangular				279(1)			
Pyramid				279(1)			
--Hexagonal				279(1)			
--Rectangular				278(1)/ CT(3)			
Spheres							
--Hemisphere				279(1)/ CT(3)			
Cylinder				278(1)/ CT(3)			
Cube				279(1)			
Cone				278(1)/ CT(2)			
--Truncated				279(1)			
Torus				279(1)			
4. Construct or copy geometric figures				279(1)			
Line segments							
--Bisector							
Angle							
--Bisector							

UNIT	9	10	11	12	13	14	15
PAGES	206-225	226-255	256-271	272-289	290-303	304-313	314-323
Circles							
Lines							
--Parallel							
--Perpendicular							
Triangles							
Cube				274-5 (6) /			
Cylinder				CT (2)			
Prism				94 (1)			
Pyramid				94 (1)			
Sphere				94 (1)			
Cone				95 (2)			
				95 (2)			
				95 (2)			
XX. GRAPHS AND SCALE DRAWINGS							
1. Identify different kinds of graphs		237 (1)					
		77 (2) / CT (1)					
Bar graphs							
Circle graphs							
Line graphs							
2. Interpret data categorized on charts		253, 255 (5)					
3. Graph sets of numbers on a number line							
Whole numbers						304 (4)	
						105 (3) /	
						CT (1)	
						304-5 (4)	
						105 (5) /	
						CT (7)	
Rational numbers							
4. Identify the components of a graph on a number plane							
Axes						306-12 (10)	
						107 (10)	

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313 306-12(10) 107(2)/ CT(2)	15 314-323
Coordinates							
5. Graph sets of numbers on a number plane							
Number pairs							
Function rules						306-7(10) 106(10)/ CT(6) 308-9, 312 (10) 107(10) 310-3(10) 107(10)/ CT(6)	
Integers							
6. Calculate the distance of two points on a map drawn to scale	218(8)						
7. Draw an object to a given scale	218(1)						
SPECIAL TOPICS							
1. Recognize concepts related to functions							
Function rules							
Number pairs							
--Addition							
--Repeated							
--Subtraction							
--Repeated							
--Multiplication					299(10)/ CT(2)		
--Division							
2. Recognize modular numbers							314-7(10) 109(10)/ CT(10)

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UNIT PAGES	9 206-225	10 226-255	11 256-271	12 272-289	13 290-303	14 304-313	15 314-323
3. Use algorithms on modular numbers							
For addition --12-clock							314-5 (10) 109 (7) / CT (7)
---4-clock							318-9 (10) 110 (10) / CT (3)
For subtraction --12-clock							316-7 (10) 109 (7) / CT (3)
---4-clock							319 (10) / CT (1)
For multiplication --12-clock							317 (10) 109 (3) / CT (3)
---4-clock							319 (10)
CHAPTER REVIEWS	224-5 (10) 76 (10)	254-5 (10) 86 (10)	270 (10) 90 (10)	289 (10) 98 (10)	301 (10) 104 (10)	313 (10) 108 (10)	321 (10) 111 (10)
CUMULATIVE REVIEWS ("Keeping in Touch")	222-3 (10)	252-3 (10)	268 (10)	288-9 (10)	302-3 (10)		322-3 (10)

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
I. SET CONCEPTS							
1. Identify special sets Empty set							
2. Recognize and relate concept of set to							
Ordered pairs							
Fractions							
Equivalent fractions							
Identify operations on sets							
Union							
Intersection							
II. PLACE VALUE							
1. Identify place value names and place value positions up to 12th place (whole numbers) 3rd place (decimals)		217 (8)					
2. Place whole numbers in expanded notation or compact form							
3. Solve expanded numeral equations by identifying the missing digits		219 (3)					
4. Solve place value problems by use of							
Abacus.							
Computer model							
5. Code and decode place value problems base 10 with other number systems							
Tally system							
Base 4							
Base 6							
Base 8							
III. OPERATIONS							
	(See XXI-3)						
	(See XXI-3)						
	(See XXI-3)						
	(See Processes)						

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
IV. SEQUENCES							
1. Identify or construct sequences							
Number patterns							
Fractional numbers							
Repeating decimals							
	(See XII-4)						
	(See XII-9)						
V. INEQUALITIES							
1. Compare numbers							
Whole numbers							
Fractions							
Decimals							
2. Compare products and factors					298 (9)		
	(See XII-2)						
	(See XII-7)						
VI. NOTATION							
1. Code and decode expressions with exponents							
Base 10							
Base 10 scientific notation							
Bases other than 10		245 (9)					
Determine opposites of whole numbers		245 (5)					
	(See XXI-5)						
VII. NUMBER FACTS							
1. Recall number facts in use of functions							
Addition							
Subtraction							
Multiplication							
Division							
VIII. EQUATIONS AND SOLUTIONS							
1. Solve equations using variables a, b, c...							
2. Solve equations finding missing							
Addend							
Factor							

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UNIT PAGES		9	10	11	12	13	14	15
		206-215	216-249	250-271	272-289	290-301	302-311	312-321
3.	Solve equations with operations							
	Addition and subtraction							
	Multiplication and division							
4.	Write equations using whole numbers							
5.	Solve equations using %				284-5(10)			
IX.	NUMBER LINE							
1.	Perform operations using a number line							
	Addition							
	--Whole numbers							
	--Fractions	(See XII-1)						
	--Integers	(See XXI-7)						
	Subtraction							
	--Whole numbers							
	--Fractions	(See XII-1)						
	Multiplication							
	--Fractions	(See XII-1)						
2.	Identify points on number line with							
	Fractions	(See XII-1)						
	Decimals	(See XII-8)						
3.	Relate labeled points on number line with specified jumping operations							
4.	Graph sets of points on the number line						303(10)	
X.	BASIC PRINCIPLES							
1.	Recognize basic principles of mathematical operations							
	Associative principle							
	--Addition of whole numbers	(See XII-3)						
	--Addition of fractions	(See XXI-6)						
	--Addition of integers	(See XII-3)						
	--Multiplication of fractions	(See XII-3)						

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UNIT	9	10	11	12	13	14	15
PAGES	206-215	216-249	250-271	272-289	290-301	302-311	312-321
Commutative principle --Addition of whole numbers --Addition of fractions --Addition of integers --Multiplication of whole numbers --Multiplication of fractions Distributive principle --Multiplication of whole numbers --Multiplication of fractions One principle --Multiplication of whole numbers --Multiplication of fractions Zero principle --Addition of whole numbers --Addition of fractions --Addition of integers	(See XII-3) (See XXI-6)						
PROCESSES (ALGORITHMS) Use algorithms for addition Whole numbers (renaming) --1-2 digit numerals --3-digit numerals --4-digit numerals Fractions --Equivalent fractions --Mixed numerals and improper fractions Decimals --1-decimal digit --2-decimal digits --3-decimal digits Integers --1-digit numerals Use algorithms for subtraction of Whole numbers (renaming) --1-2 digit numerals	(See XII-5) (See XII-10) (See XXI-7)						

XI.
1. of

2. tion of

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
--3-digit numerals							
--4-digit numerals							
Fractions	(See XII-5)						
--Equivalent fractions	(See XII-10)						
Decimals							
--1-decimal digit							
--2-decimal digits							
--3-decimal digits							
Integers							
--1-digit numerals	(See XXI-7)						
3. Use algorithms for multiplication of							
Whole numbers							
--One factor of 1-2-digits							
--One factor of 3-digits							
--One factor of 4-digits or more							
--Two factors of 2-digits each							
--Two factors of 3-digits each							
Fractions	(See XII-5)						
--Two factors in fractional form							
--Two factors in mixed numeral form							
Decimals	(See XII-10)						
--One factor of 1-decimal digit							
--One factors of 2-decimal digits							
Integers							
--1-digit numerals							
4. Use algorithms for division of							
Whole numbers							
--1-digit divisors							
--2-digit divisors							

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UNIT	9	10	11	12	13	14	15
PAGES	206-215	216-249	250-271	272-289	290-301	302-311	312-321
--Check division							
--Remainders in division							
--Zeros in quotient							
Fractions	(See XII-5)						
--Associate improper fractions with mixed numerals							
--Determine reciprocal of fractions							
--Determine the quotient of two rational numbers							
Decimals	(See XII-10)						
--Whole number divisor							
--1-decimal dividend							
--2-decimal dividend							
--3-decimal dividend							
--Decimal divisor							
--1-decimal digit							
--2-decimal digits							
--3-decimal digits							
XII. RATIONAL NUMBERS							
1. Recognize and relate properties of fractions							
Identify related properties of fractions							
--Sets of equivalent fractions (See I-2)							
--Fractions in lowest form							
--Least common denominators							
Relate fractions to							
--Regions							
--Rational numbers							
--Names for rational numbers							
--Whole numbers							
--Mixed numerals							
--Number line							
2. Compare two fractions							
Equalities							
Inequalities							

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UNIT	9	10	11	12	13	14	15
PAGES	206-215	216-249	250-271	272-289	290-301	302-311	312-321
3. Recognize and use basic principles for operations with fractions							
Commutative principle (addition)							
Associative principle (addition)							
Identity principle (addition)							
Commutative principle (multiplication)							
Associative principle (multiplication)							
Identity principle (multiplication)							
Addition and multiplication principle (distributive)							
4. Recognize sequences of fractions							
Use algorithms for Addition of fractions							
--Equivalent fractions							
--Mixed numerals and improper fractions							
Subtraction of fractions							
Multiplication of fractions							
--Proper form							
--Improper form and mixed numerals							
--Reciprocals							
Division of fractions							
--Improper form and mixed numerals							
--Reciprocals							
--Quotient of two rational numbers							

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UNIT	9	10	11	12	13	14	15
PAGES	206-215	216-249	250-271	272-289	290-301	302-311	312-321
6. Identify place value names and place value positions with decimals --Up to 3-decimal places		217, 228(10) 76(10)/CT (8)					
7. Compare two decimals		221(10) 78(10)					
8. Relate decimals to points on the number line		220(10)					
9. Recognize sequences of repeating decimals. Use algorithms for Addition of decimals		243(2)					
10. --1-decimal digit		222(6) 79(10) 222(10) 79, 88(10)/ CT(1)					
--2-decimal digits		222(10) 79(8)					
--3-decimal digits		222(1) 79(3) 222(5) 79, 88(9)/ CT(1)					
Subtraction of decimals		222(4) 79(2)					
--1-decimal digit		232(10) 82-3(10)/ CT(1)					
--2-decimal digits		232(10) 82-3(10)/ CT(2)					
--3-decimal digits							
Multiplication of decimals							
--One factor of 1-decimal digit							
--One factor of 2-decimal digits							

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
Division of decimals							
--Whole number divisor							
--1-decimal dividend		237(4) 84(1) 237(2) 84(2)/CT (1)					
--2-decimal dividend		237(3) 84(3)/CT (1)					
--3-decimal dividend							
--Decimal divisor		239(7) 85(4) 239(8) 85(3)/CT (1)					
--1-decimal digit		239(2) 85(2)					
--2-decimal digits							
--3-decimal digits							
11. Associate percent with rational numbers				273(10) 97,99(10)/ CT(10)			
12. Solve word problems with percent related to Money				274-5(10) 98,101(8) /CT(5) 276(9) 98-9(6) 275,279, 282-3(10) 98,100-1 (8)/CT(3)			
Area							
Other							
XIII. RATIO AND PROPORTION							
1. Identify equal ratios	208(10) 72,75(10)/ CT(8)						

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
2. Relate ratios to Measurement	207, 209 (10) /CT(1) 207 (1) 71 (4)/CT(2) 207, 209 (10) 71, 75 (10)/ CT(5)						
Expression of rate	210 (6)/CT(4)						
3. Compare 2 sets according to the number of objects in each	209, 211 (10) 72, 75 (2)/CT (2)						
3. Relate ratios to length of sides of triangles							
4. Use ratios in word problems							
XIV. PROBLEM SOLVING							
1. Solve verbal problems involving multiple operations							
2. Solve verbal problems involving special topics							
Places							
--Washington, D.C.							
--Cape Kennedy							
--Egyptian pyramids							
Animals							
--Birds							
--Horses							
Machines							
--Rockets							
--Automobiles							
Human body							
Falling bodies							
Density							
Averages, means							
Interest and percent discount							

287 (10)

269 (6)

225 (6)

281-2 (10) /
CT (9)

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UNIT	9	10	11	12	13	14	15
PAGES	206-215	216-249	250-271	272-289	290-301	302-311	312-321
Rate, time, distance, and money		87(3)					
Recipes, liquid measure		87(3)/CF(1)					
Temperature							
XV. LOGFC							
XVI. NUMBER THEORY							
1. Identify factors of numbers							
2. Identify numbers divisible by							
2							
3							
5							
3. Identify factors trees							
4. Identify least common multiple							
5. Identify greatest common divisor							
6. Identify prime numbers							
7. Identify composite numbers							
8. Determine prime factorization for given numbers							
9. Solve problems using special sets of numbers							
10. Solve equations using 12-clock arithmetic 5-clock arithmetic							
XVII. ESTIMATION							
1. Estimate results of mathematical operations							
Multiplication							
Division		236(10)					
Estimate							
Population							
Circumference of circle			253(8) 90(4)				

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
Area of circle			255(4) 91(3)				
Miles, speed, cost Length, thickness, width Estimate results in short stories		241(7)					
3. Compare numbers Decimals with decimals or mixed numbers Whole numbers with fractions Round numbers to nearest whole number, tenth, or hundredth		221(10) 78-88(10)					
4. Round numbers to nearest whole number, tenth, or hundredth		229(7) 81(10)/CT (1)					
XVIII. MEASUREMENT							
1. Recognize and use systems for linear measurement Centimeter Inch Mile Kilometer		87(2)					
2. Measure circumference of circle			252-3(7) 90(4)/CT(2)				
3. Measure perimeter of polygons							
4. Measure length of sides of rectangles		227(6)					
5. Determine length of sides of triangles or areas of squares using Pythagorean Theorem							
6. Determine area of Rectangles Triangles Circles Surfaces		227(6)	91(3) 254-5(10) 91,96(5) 264-8(10) 95,96(10)/ CT(2)				

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
7. Determine volume of rectangular prisms			262-3 (10) 95, 96 (9) / CT (2)	✓			
8. Determine measure of angles							
9. Recognize and use indirect measure	210, 212 (10)						
10. Measure circumference of circle to approximate pi (π)			253 (2) / CT (7)				
11. Measure scale drawings	(See XX)						
XIX. GEOMETRY							
1. Recognize and construct basic figures							
Lines							
--Parallel							
--Perpendicular							
--Intersection							
Line segments							
Points							
Rays							
Angles							
--Right							
--Congruent							
--Bisected							
--Degree and radian measure							
2. Construct geometric shapes and/or state relationships among various components							
Triangle							
--Construction							
--Congruent							
--Area							
Right Triangle							
--Pythagorean Theorem							
--Ratios of sides							
--Hypotenuse							

(See XVIII-6)
(See XVIII-5)
(See XVIII-5)
(See XVIII-5)
(See XVIII-9)
(See XVIII-9)

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
Polygons							
--Area of rectangles	(See XVIII-6)						
--Similar	(See XVIII-9)						
--Perimeter	(See XVIII-3, 4)						
Circles							
--Tangent, radius, diameter			251(0)/CT (2)				
--Area			250(3)				
--Chord			89(1)/CT(1)				
--Circumference							
--Pi (π)							
Protractor							
Closed curve							
3. Construct space figures and/or state relationships among various components							
Gross sections							
The 5. regular solids							
Cubes			261(3)/CT (1)				
--Faces			258(7)				
--Edges			94(10)/CT (1)				
--Vertices			92(1)				
Surfaces area			258-9(2)/ CT(1)				
Geometric planes			259(5)/CT (1)				
Sphere			259(3)/CT (2)				
Cylinder							
			256(1)				
			257(1)				
			256-7(1)				
			92(1)/CT (1)				
			257(1)				
			92(1)				
			258,260(2)				
Cone							
Octahedron							

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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
Prisms			257 (1) 260 (1) 93 (1) 257, 262 (10)				
--Triangular			260 (1)				
--Hexagonal			93 (1)				
--Rectangular			257, 262 (10)				
Pyramids			260 (1)				
--Square			257 (1)/CT (1)				
--Rectangular			266-7 (8)				
4. Identify measures in geometric illusions							
5. Recognize and use concepts from coordinate geometry	(See XX-3)						
XX. GRAPHS AND SCALE DRAWINGS							
1. Use maps and graphs as aids in solving verbal problems							
Bar graphs							
Circle graphs							
Charts							
Pictographs	(See XIV-2)	225 (8)		283, 289 (10)			
Geographic maps	74 (6)						
Line graphs	212-3 (10)						
Scale drawings	74 (7)						
2. Use number line to graph sets of points						303 (10) 106, 109 (9) /CT (9)	
3. Use number plane to graph whole number pairs						304 (10) 107, 109 (10) /CT (10) 305 (10) 107, 109 (10) /CT (5)	
Rational number pairs							
Functions	(See XXI-2)						

UNIT	9	10	11	12	13	14	15
PAGES	206-215	216-249	250-271	272-289	290-301	302-311	312-321
XXI. SPECIAL TOPICS							
1. Use function rules to supply missing numbers							
One function							
Composite functions							
Graph functions							
2.							
3. Name numbers in bases other than base 10							
Base 4							
Base 6							
Base 8							
Other bases							
4. Solve verbal problems using integers							
5. Determine opposites of whole numbers							
6. Recognize and use basic principles for addition of integers							
7. Perform operations on integers							
Addition							
Subtraction							
Order							
8. Perform experiments to determine probabilities of outcomes							
Coins							

MS MATH
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UNIT PAGES	9 206-215	10 216-249	11 250-271	12 272-289	13 290-301	14 302-311	15 312-321
Cubes							313, 318 (10) /CT (7)
Pairs of rods							314-5, 318 (10)/CT (1)
Other familiar materials							316-8 (10)/ CT (2)
CHAPTER REVIEWS	215 (10) <u>75 (10)</u>	248-9 (10) <u>88 (10)</u>	270-1 (10) <u>96 (9)</u>	288-9 (10) <u>101 (10)</u>	301 (10) <u>105 (10)</u>	309 (10) <u>109 (10)</u>	321 (10) <u>112 (9)</u>
CUMULATIVE REVIEWS ("Keeping in Touch")	214 (10)	246-7 (10)	268-9 (10)	286-7 (10)	300 (10)	310-11 (10)	320 (10)

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
I. SET CONCEPTS								
1. Identify special sets Empty set				86(1) ^a				
2. Recognize and relate concept of set to Ordered pairs Fractions						125(10) 48(10) ^b 126, 127(10) 46, 50(10)		
Equivalent fractions (See XII-1)								
3. Identify operations on sets								
Union				86(2) 86(2)				
Intersection								
II. PLACE VALUE								
1. Identify place value names and place value posi- tions up to 12th place (whole numbers)	2, 3(10) 1, 7(10)/ CT(7) ^c (See XII-6)							
3rd place (decimals)								
2. Place whole numbers in expanded notation or compact form	4, 12(10) 2, 7(6)/CT (1)							
3. Solve expanded numeral equations by identifying the missing digits	4, 5(10) 2(10)							
4. Solve place value prob- lems by use of Abacus								
Computer model	1(1) 1, 2, 3(10)							

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
5. Code and decode place value problems base 10 with other number systems Tally system Base 4 Base 6 Base 8	1(1) (See XXI-3) (See XXI-3) (See XXI-3)							
III. OPERATIONS	(See Processes)							
IV. SEQUENCES								
1. Identify or construct sequences Number patterns			82 (4)					184-7, 198 (3) 60, 62, 66 (10)/CT(5)
Fractional numbers Repeating decimals	(See XII-4) (See XII-9)							
INEQUALITIES								
1. Compare numbers Whole numbers	5 (10) 2(10)/CT(1) (See XII-2) (See XII-7)		46 (9)					196-7 (10) 68 (10) J
2. Compare products and factors								196-7 (10) 68 (10)
VI. NOTATION								
1. Code and decode expressions with exponents Base 10	10-12 (10) 4 (10)/CT(4)							

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
Base 10 scientific notation Bases other than 10			52(10) $\frac{20(10)}{(2)}$ CT				/	
2. Determine opposites of whole numbers	(See XXI-5)							
VII. NUMBER FACTS								
1. Recall number facts in use of functions		21, 24, 26 (10) 8, 9, 10(10) $\frac{7}{CT(3)}$ 24, 26(10) $\frac{11(10)}{(2)}$ CT						
Addition		21, 26(10) 8, 9, 10(10) $\frac{7}{CT(10)}$ 26(10) $\frac{11(10)}{(2)}$ CT						
Subtraction								
Multiplication								
Division								
VIII. EQUATIONS AND SOLUTIONS								
1. Solve equations using variables a, b, c...	11(10)	$\frac{10-1(10)}{CT(10)}$	52(10)/ CT(2)					
2. Solve equations finding missing Addend		24(8) $\frac{10(5)}{(1)}$ CT 25(8) $\frac{14(8)}{(7)}$ CT						
Factor								

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
3. Solve equations with operations								
Addition and subtraction								
Multiplication and division								
4. Write equations using whole numbers								
5. Solve equations using %								
IX. NUMBER LINE								
1. Perform operations using a number line								
Addition								
--Whole numbers								
--Fractions								
--Integers								
Subtraction								
--Whole numbers								
--Fractions								
Multiplication								
--Fractions								
Identify points on number line with								
Fractions								
Decimals								
3. Relate labeled points, on number line with specified jumping operations								

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UNIT		1	2	3	4	5	6	7	8
PAGES		1-19	20-39	40-79	80-95	96-123	124-137	138-163	164-205
4.	Graph sets of points on the number line								
X.	BASIC PRINCIPLES								
1.	Recognize basic principles of mathematical operations								
	Associative principle								
	--Addition of whole numbers		33 (3) <u>13 (2) / CT</u> (1)						
	--Addition of fractions (See XII-3)								
	--Addition of integers (See XXI-6)								
	--Multiplication of whole numbers		33 (3) <u>13 (2)</u>						
	--Multiplication of fractions (See XII-3)								
	Commutative principle								
	--Addition of whole numbers		33 (3) <u>13 (3) / CT</u> (1)						
	--Addition of fractions (See XII-3)								
	--Addition of integers (See XXI-6)								
	--Multiplication of whole numbers		33 (5) <u>13 (2)</u>						
	--Multiplication of fractions (See XII-3)								
	Distributive principle								
	--Multiplication of whole numbers		33 (7) <u>13 (2)</u>						
	--Multiplication of fractions (See XII-3)								
	One principle								
	--Multiplication of whole numbers		33 (10) <u>13 (4)</u>						
	--Multiplication of fractions (See XII-3)								

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
Zero principle								
--Addition of whole numbers		33(10) <u>13(2)</u>						
--Addition of fractions (See XII-3)								
--Addition of integers (See XXI-6)								
XI. PROCESSES (ALGORITHMS)								
1. Use algorithms for addition of								
Whole numbers (renaming)								
--1-2 digit numerals		22, 24 (10) <u>10, 15 (10) /</u> CT(3)	40 (10) <u>16, 27 (7) /</u> CT(3) 40 (8) <u>16, 27 (6) /</u> CT(2) 40 (8) <u>16 (1) /</u> (1)					
--3-digit numerals								
--4-digit numerals								
Fractions								
--Equivalent fractions (See XII-5)								
--Mixed numerals and improper fractions								
Decimals								
--1-decimal digit (See XII-10)								
--2-decimal digits								
--3-decimal digits								
Integers								
--1-digit numerals (See XXI-7)								
Use algorithms for subtraction of								
Whole numbers (renaming)								
--1-2 digit numerals		24 (10) <u>10, 15 (10) /</u> CT(2)	42 (3) <u>16, 27 (5) /</u>					

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES

GRADE 6

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UNIT
PAGES

1

2

3

4

5

6

7

8

164-205

1-19	20-39	40-79	80-95	96-123	124-137	138-163	164-205
--3-digit numerals --4-digit numerals Fractions (See XII-5) --Equivalent fractions (See XII-10) Decimals --1-decimal digit --2-decimal digits --3-decimal digits Integers --1-digit numerals (See XXI-7) Use algorithms for mul- tiplication of Whole numbers --One factor of 1-2- digits --One factor of 3- digits --One factor of 4- digits or more --Two factors of 2- digits each --Two factors of 3- digits each Fractions --Two factors in fractional form --Two factors in mixed numeral form (See XII-5)	22-5(10)/ 11,15(10)/ CT(10)	42(10) 16,27(7)/ CT(3) 42(9) 16(1)/CT (3)					
	46-8(10) 17,18,27 (10)/CT(2) 46-8(10) 17,18,27 (10)/CT(1) 46-7,49 (10) 17,18(7) 47-8(10) 17,18(10)/ CT(1) 49(10) 17,18(7)/ CT(1)						

ADDISON-WESLEY: INSTRUCTIONAL OUTCOMES GRADE 6

UNIT PAGES	1 1-19 (See XII-10)	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
Decimals								
--One factor of 1- decimal digit								
--One factor of 2- decimal digits								
Integers								
--1-digit numerals								
4. Use algorithms for divi- sion of								
Whole numbers								
--1-digit divisors								
--2-digit divisors								
--Check division								
--Remainders in divi- sion								
--Zeros in quotient								
Fractions								
--Associate improper fractions with mixed numerals								
--Determine reciprocal of fractions								
--Determine the quo- tient of two rational numbers								
Decimals								
--Whole number divisor								
--1-decimal dividend								
--2-decimal dividend								
--3-decimal dividend								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 6

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
<p>--Decimal divisor</p> <p>--1-decimal digit</p> <p>--2-decimal digits</p> <p>--3-decimal digits</p>								
<p>XII. RATIONAL NUMBERS</p> <p>1. Recognize and relate properties of fractions</p> <p>Identify related properties of fractions</p> <p>--Sets of equivalent fractions</p> <p>--Fractions in lowest form</p> <p>--Least common denominators</p> <p>Relate fractions to</p> <p>--Regions</p> <p>--Rational numbers</p> <p>--Names for rational numbers</p> <p>--Whole numbers</p> <p>--Mixed numerals</p> <p>--Number line</p>						<p>128 (10)</p> <p>47 (10) / CT (4)</p>	<p>142-3 (10) / CT (4)</p>	
						<p>124 (10)</p> <p>46 (10)</p> <p>130 (6)</p> <p>48, 50 (10) / CT (3)</p> <p>131, 134 (10)</p> <p>48, 50 (10)</p> <p>134 (10) / CT (2)</p> <p>130-1, 133-4 (10)</p> <p>48, 50 (10) / CT (2)</p>	<p>148 (10) / CT (4)</p>	
<p>2. Compare two fractions</p> <p>Equalities</p> <p>Inequalities</p>						<p>132 (10)</p> <p>133 (10)</p> <p>49, 50 (10) / CT (8)</p>		

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES GRADE 6

UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
3. Recognize and use basic principles for operations with fractions								
Commutative principle (addition)								168(9)
Associative principle (addition)								60(10)
Identity principle (addition)								169(10)
Commutative principle (multiplication)								60(10)
Associative principle (multiplication)								169(4)
Identity principle (multiplication)								60(8)
Addition and multiplication principle (distributive)								177(10)
4. Recognize sequences of fractions								62(10)
5. Use algorithms for Addition of fractions								175, 185,
--Equivalent fractions								198(3)
--Mixed numerals and improper fractions								
Subtraction of fractions								
Multiplication of fractions								
--Proper form								
								138-44, 150,
								152(10)
								51, 52(10) /
								CT(7)
								152, 158(10)
								54, 56, 58(10)
								/CT(4)
								138, 140-5
								(10)
								51, 52, 56, 58
								(10)
								165, 170-1,
								175(10)
								59, 60, 61
								(10) CT(8)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 6UNIT
PAGES1
1-192
20-393
40-794
80-955
96-1236
124-1377
138-1638
164-205--Improper form and
mixed numerals

--Reciprocals

Division of fractions

--Improper form and
mixed numerals

--Reciprocals

--Quotient of two
rational numbers6. Identify place value
names and place value positions
with decimals7. --Up to 3-decimal places
Compare two decimals8. Relate decimals to points
on the number line9. Recognize sequences of
repeating decimals

Use algorithms for

Addition of decimals

--1-decimal digit

--2-decimal digits

--3-decimal digits

Subtraction of decimals

--1-decimal digit

--2-decimal digits

--3-decimal digits

Multiplication of deci-
mals--One factor of 1-deci-
mal digit--One factor of 2-deci-
mal digits

Division of decimals

--Whole number divisor

--1-decimal dividend

177 (10)
59,62 (10) /
CT (5)
174 (10) /
CT (1)
64-66,70
(10) / CT (3)
185 (10) /
CT (1)
188 (10)
64-6,70
(10) / CT (1)

159 (10)
57 (10)

LMS MATH

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 6

UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
--2-decimal dividend								
--3-decimal dividend								
--Decimal divisor								
--1-decimal digit								
--2-decimal digits								
--3-decimal digits								
11. Associate percent with rational numbers								
12. Solve word problems with percent related to Money Area Other								
XIII. RATIO AND PROPORTION								
1. Identify equal ratios								
2. Relate ratios to Measurement Expression of rate Compare 2 sets according to the number of objects in each								
3. Relate ratios to length of sides of triangles								
4. Use ratios in word problems								
XIV. PROBLEM SOLVING								
1. Solve verbal problems involving multiple operations		30(10) 12(10)/CT (3)						
2. Solve verbal problems involving special topics Places Washington, D.C. Cape Kennedy Egyptian pyramids			53(6)	93(5)			147(5)	

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 6

UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
3. Identify factor trees				83(10) 28,33(7)/ CT(4)				
4. Identify least common multiple				88-9(10) 31,33(10)/ CT(3)				
5. Identify greatest common divisor				87(10) 30,33(10)/ CT(2)				
6. Identify prime numbers				84,86(10) 29,33(10)/ CT(10)				
7. Identify composite numbers				84(10)/CT (10)				
8. Determine prime factorization for given numbers				85(10) 29(10)/CT (1)				
9. Solve problems using special sets of numbers				86(10)/ CT(1)				
10. Solve equations using 12-clock arithmetic				90(10) 32(6) 91(10)				
5-clock arithmetic								
XVII. ESTIMATION								
1. Estimate results of mathematical operations								
Multiplication								
Division		58(5)						
2. Estimate								
Population								
Circumference of circle							147(2)	
Area of circle								
Miles, speed, cost								
Length, thickness, width							147(2) 147(1)	
3. Estimate results in short stories								200-1(10) 69(6)

ADDISON-WESLEY INSTRUCTIONAL/OUTCOMES

GRADE 6

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
4. Compare numbers Decimals with decimals or mixed numbers Whole numbers with frac- tions								196 (10)/ CT (1)
5. Round numbers to nearest whole number, tenth, or hun- dredth	8-9 (10) 3 (10)/CT (2)							198 (10)
XVIII. MEASUREMENT								
1. Recognize and use systems for linear measurement Centimeter					101 (2) 35,45 (2)/ CT (1)			63 (3)/CT (1) 67 (1)
Inch					101 (2)			
Mile					35 (1)			
Kilometer					101 (2)			
2. Measure circumference of circle					101 (2)			
3. Measure perimeter of polygons					101 (1)			
4. Measure length of sides of rectangles					107 (10) 38 (4)			
5. Determine length of sides of triangles or areas of squares using Pythagorean Theorem					115 (10) 43 (4)/CT (2)			
6. Determine area of Rectangles					108 (10) 39 (10)/CT (2) 113-4 (10) 42,45 (7)/ CT (2)			63 (1)
Triangles								
Circles Surfaces								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 6

UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
7. Determine volume of rectangular prisms	A							
8. Determine measure of angles					104(10)			
9. Recognize and use indirect measure								
10. Measure circumference of circle to approximate pi (π)								
11. Measure scale drawings	(See XX)							
XIX. GEOMETRY								
1. Recognize and construct basic figures					116-8(8) 44-5(10)/ CT(2)			
Lines					116(2) 44(2)/CT(1) 116-7(2)			
--Parallel					99,100(10) 34-5,45(10) /CT(3)			
--Perpendicular					96-7(10) 34(1) 99(2)			
--Intersection					34(4)/CT(1)			
Line segments								
Points					103(1) 36(1) 102(7)			
Rays					34,36,45(5) /CT(1)			
Angles					103(2) 36(1) 105(10)			
--Right					37,45(7)/ CT(1)			
--Congruent								
--Bisected								
--Degree and radian measure								

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 6

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
2. Construct geometric shapes and/or state relationships among various components								
Triangle								
--Construction								
--Congruent								
--Area	(See XVIII-6)							
Right Triangle	(See XVIII-5)							
--Pythagorean Theorem	(See XVIII-5)							
--Ratios of sides	(See XVIII-9)							
--Hypotenuse	(See XVIII-9)							
Polygons								
--Area of rectangles	(See XVIII-6)							
--Similar	(See XVIII-9)							
--Perimeter	(See XVIII-3, 4)							
Circles								
--Tangent, radius, diameter								
--Area	(See XVIII-6)							
--Chord								
--Circumference	(See XVIII-2)							
--Pi (π)	(See XVIII-10)							
--Protractor								
Closed curve								
3. Construct space figures and/or state relationships among various components								
Cross sections								
The 5 regular solids								
Cubes								
--Faces								
--Edges								
--Vertices								
Surface area	(See XVIII-6)							
Geometric planes								
Sphere								
Cylinder								
Cone								
Octahedron								

112 (7)
34, 40 (7)
110 (10)
40 (4) / CT (1)

104, 120 (10)
106 (4)

96 (1)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 6

UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
Prisms								
--Triangular								
--Hexagonal								
--Rectangular								
Pyramids								
--Square								
--Rectangular								
4. Identify measures in geometric illusions								
5. Recognize and use con- cepts from coordinate geometry (See XX-3)								
XX. GRAPHS AND SCALE DRAWINGS								
1. Use maps and graphs as aids in solving verbal problems								
Bar graphs			70 (4)					
Circle graphs								
Charts								
Pictographs								
Geographic maps								
Line graphs			41, 43 (10)				156 (8)	193 (10) 194 (10)
Scale drawings								
2. Use number line to graph sets of points								
3. Use number plane to graph								
Whole number pairs								
Rational number pairs								
Functions								
(See XXI-2)								
XXI. SPECIAL TOPICS								
1. Use function rules to supply missing numbers								
One function								
Composite functions		21-2, 37 (10) 8-9, 15 (10) / CT (8) 26-7 (10)					154 (10)	178 (10)

ADDISON-WESLEY INSTRUCTIONAL OUTCOMES
GRADE 6

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UNIT PAGES	1 1-19	2 20-39	3 40-79	4 80-95	5 96-123	6 124-137	7 138-163	8 164-205
2. Graph functions								
3. Name numbers in bases other than base 10								
Base 4	15(2)							
Base 6	5(2)							
Base 8	15-8(10)							
Other bases	5-6(10)/CT							
4. Solve verbal problems using integers	(5)							
5. Determine opposites of whole numbers	15(2)							
6. Recognize and use basic principles for addition of integers	5(2)							
7. Perform operations on integers	5(2)							
Addition								
Subtraction								
Order								
8. Perform experiments to determine probabilities of outcomes								
Coins								
Cubes								
Pairs of rods								
Other familiar materials								
CHAPTER REVIEWS	19(10)	39(10)	78-9(10)	94-5(10)	123(10)	137(10)	162-3(10)	204-5(10)
	7(10)	15(10)	27(10)	33(10)	45(10)	50(10)	58(10)	70(10)
CUMULATIVE REVIEWS ("Keeping in Touch")		38(10)	76-7(10)	92-3(10)	122(10)	136(10)	160-1(10)	202-3(10)

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